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CITATIONS FROM THE
RUBBER AND PLASTICS RESEARCH ASSOCIATION
DATA BASE

POLYMER FILMS: GAS DIFFUSION
(1973 - MAY 82)

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1 OF 1
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-- 1 - AD NUMBER: D435584
-- 5 - CORPORATE AUTHOR: NATIONAL TECHNICAL INFORMATION SERVICE
-- SPRINGFIELD VA*
-- 6 - UNCLASSIFIED TITLE: POLYMER FILMS: GAS DIFFUSION (1973-MAY 82).
-- (CITATIONS FROM THE RUBBER AND PLASTICS RESEARCH ASSOCIATION DATA
-- BASE).
--11 - REPORT DATE: MAY , 1982
--12 - PAGINATION: 80P
--20 - REPORT CLASSIFICATION: UNCLASSIFIED
--22 - LIMITATIONS (ALPHA): APPROVED FOR PUBLIC RELEASE; DISTRIBUTION
-- UNLIMITED. AVAILABILITY: NATIONAL TECHNICAL INFORMATION SERVICE,
-- SPRINGFIELD VA. 22161. PB82-860719.
--33 - LIMITATION CODES: 1 24
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BIBLIOGRAPHIC INFORMATION

PB82-860719

POLYMER FILMS: GAS DIFFUSION (1973 - MAY 82)
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MAY 81

NEW ENGLAND RESEARCH APPLICATION CENTER, STORRS, CT

NATIONAL TECHNICAL INFORMATION SERVICE, SPRINGFIELD, VA

REPORT PERIOD COVERED: 1973 - MAY 82

THIS BIBLIOGRAPHY CONTAINS CITATIONS CONCERNING THE DIFFUSION OF GASES THROUGH POLYMERIC FILMS RELATIVE TO THE STRUCTURE AND TYPE OF GAS. EMPHASIS IS PLACED ON METHODS OF MEASURING PERMEABILITY AND THE SELECTIVE TRANSPRT OF GASES. SPECIFIC STUDIES INCLUDE PACKAGING FILMS, REINFORCED POLYMERS, RUBBERS, AND METALLIZED PLASTICS. THE PERMEABILITY OF OXYGEN AND WATER VAPOR THROUGH INSULATION ON WIRES AND CABLES IS ALSO INCLUDED.
(CONTAINS 90 CITATIONS)

PRICE CODE: PC N01 MF N01

USER INFORMATION

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SAMPLE CITATION

TITLE-----POLYPHOSPHAZENES - IMPORTANT INORGANIC POLYMERS

ACCESSION----79-01 26261L

NUMBER

AUTHOR-----SINGLER, R. E. HAGNAUER, G. L. SCHNEIDER, N. S.

POLYM.NEWS,5,NO.1,SEPT.1978,P.9-17

POLYM. NEWS-5, SEPT. 1978, P.9-17

ABSTRACT----THE SYNTHESIS OF POLYPHOSPHAZENES AND THEIR CHAIN AND BULK STRUCTURES ARE DESCRIBED. THEIR USE AS FLUOROELASTOMERS AND IN FLAME-RETARDANT APPLICATIONS IS REVIEWED TOGETHER WITH THEIR BIOMEDICAL APPLICATIONS, 34 REFS. 45D.

SAMPLE SUBJECT INDEX ENTRY

KEYWORD-----FLUOROELASTOMERS

CITATION PAGE NUMBER-----16 19-01 26261L---ACCESSION NUMBER

ABOUT
RUBBER AND PLASTICS RESEARCH ASSOCIATION

RAPRA IS THE MACHINE-READABLE DATA BASE PRODUCED BY THE RUBBER AND PLASTICS RESEARCH ASSOCIATION OF GREAT BRITAIN. THE TIME SPAN OF THE DATA BASE IS FROM JANUARY 1972 TO PRESENT. THE DATA BASE PROVIDES COVERAGE OF CHEMISTRY AND CHEMICAL ENGINEERING OF POLYMERS (RUBBERS AND PLASTICS). TECHNICAL AND COMMERCIAL ASPECTS OF RUBBER AND PLASTICS ARE COVERED.

THE SOURCES OF THE CITATIONS ARE APPROXIMATELY 60% JOURNAL ARTICLES, 25% PATENTS AND THE REMAINDER FROM MONOGRAPHS, TRADE LITERATURE AND GOVERNMENT REPORTS. ABOUT 20,000 ITEMS ARE ADDED TO THE DATA BASE ANNUALLY, AND THE DATA BASE PRESENTLY CONTAINS ABOUT 150,000 CITATIONS. ABOUT 10 JOURNALS ARE ABSTRACTED IN THEIR ENTIRETY, WITH SELECTIVE ABSTRACTING PERFORMED FROM 400 JOURNAL TITLES REVIEWED FOR INPUT.

ABOUT PUBLISHED SEARCHES

PUBLISHED SEARCHES ARE SPECIAL INFORMATION PRODUCTS DEVELOPED FROM A VARIETY OF ONLINE DATA BASES. THE NTIS DATA BASE, WHICH IS THE KEYSTONE OF THE PUBLISHED SEARCH PROGRAM, ALONE CONTAINS MORE THAN 750,000 DOCUMENT/DATA RECORDS OF GOVERNMENT-SPONSORED RESEARCH. OTHER DATA BASES SEARCHED INCLUDE THOSE OF THE U.S. FIRE ADMINISTRATION, FEDERAL EMERGENCY MANAGEMENT AGENCY; AMERICAN PETROLEUM INSTITUTE; U.S. DEPARTMENT OF ENERGY(EDB); ENGINEERING INDEX; INSTITUTE OF PAPER CHEMISTRY; MANAGEMENT CONTENTS; INFORMATION RETRIEVAL LIMITED; INSTITUTION OF ELECTRICAL ENGINEERS (INSPEC); INTERNATIONAL FOOD INFORMATION SERVICE (FSTA); AND THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION. (IAA).

PUBLISHED SEARCHES ARE SPECIALLY PREPARED BIBLIOGRAPHIES REFERENCING REPORTS WITH FULL BIBLIOGRAPHIC CITATIONS, INCLUDING INFORMATIVE ABSTRACTS AND, WHEN POSSIBLE, ORDERING INFORMATION AND PRICE. THE ABSTRACTS PROVIDE A QUICK, INEXPENSIVE WAY TO DETERMINE WHICH REPORTS IN THE NTIS DATA BASE, FOR ONE, ARE OF SPECIAL INTEREST TO A USER. THE SEARCHES ARE PREPARED BY INFORMATION SPECIALISTS AND ARE AVAILABLE IN MANY TOPIC AREAS; THEY ARE UPDATED AT REGULAR INTERVALS, AND COST THIRTY DOLLARS IN PAPER OR MICROFICHE FOR DOMESTIC ORDERS. A COMPLETE LIST OF CURRENT PUBLISHED SEARCHES IS AVAILABLE BY REQUESTING BROCHURE NUMBER PB82-105024 FOR FIVE DOLLARS, REFUNDABLE WITH FIRST PUBLISHED SEARCH PURCHASE. IN ADDITION TO REGULAR UPDATING, NEW TITLES (SEARCHES) ARE BEING ADDED EACH WEEK AND NEW ARRANGEMENTS ARE BEING COMPLETED WITH DATA BASE OWNERS TO ACCESS AN EVEN GREATER VARIETY OF INFORMATION SOURCES.

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CITATIONS

SORPTION AND DIFFLSION OF HYDROCARBON VAPOURS IN GLASSY
POLYMERS 82-03 03929L

BARRIE, J. A. WILLIAMS, M. J. L. MUNDAY, K.

POLYM.ENGNG.SCI.,20,NO.1,MID-JAN.1980,P.20-9

SORPTION ISOTHERMS IN THE REGION OF LOW RELATIVE PRESSURES
WERE DETERMINED AT SEVERAL TEMPERATURES FOR METHANE, PROPANE
AND CHLORODIFLUOROMETHANE IN PS, AND FOR PROPANE IN
BISPHENOL A POLYCARBONATE AND POLYVINYL ACETATE. THE RESULTS
WERE WELL REPRESENTED BY THE ISOTHERM EQUATION OF DUAL
SORPTION THEORY AS APPLIED TO GLASSY POLYMERS. A STUDY WAS
MADE OF THE TEMPERATURE DEPENDENCE OF THE ISOTHERM
PARAMETERS. THE LANGMUIR COMPONENT TO SORPTION DECREASED AS
TG WAS APPROACHED, AND MEASUREMENTS WITH POLYVINYL ACETATE
CONFIRMED THAT THIS COMPONENT WAS ABSENT ABOVE THE
TRANSITION. AVERAGE DIFFUSION COEFFICIENTS WERE OBTAINED
FROM SORPTION (DESORPTION) RATE CURVES AT CONSTANT PRESSURE
FOR PROPANE IN PS AND POLYCARBONATE, AND A PROCEDURE WAS
DEVELOPED FOR THEIR ANALYSIS TO YIELD THE DIFFUSION
COEFFICIENTS OF THE SORBED SPECIES. 24 REFS. 93513

PRESSURE DEPENDENCE OF DIFFUSION COEFFICIENT FOR CARBON
DIOXIDE IN GLASSY POLYMERS 82-03 03930L

TOI, K.

POLYM.ENGNG.SCI.,20,NO.1,MID-JAN.1980,P.30-5

THE PRESSURE DEPENDENCE OF THE APPARENT DIFFUSION AND
PERMEATION COEFFICIENTS WAS OBSERVED USING THE PERMEATION
TIME-LAG METHOD FOR CARBON DIOXIDE IN GLASSY PETP, PS AND
PVC BELOW 1 ATM. THE PERMEATION COEFFICIENT WAS CONSTANT,
WHEREAS THE DIFFUSION COEFFICIENT INCREASED WITH PRESSURE.
IT WAS CONCLUDED THAT THE ADSORBED CARBON DIOXIDE WAS
COMPLETELY IMMOBILISED AND DID NOT PARTICIPATE DIRECTLY IN
THE DIFFUSION. A COMPUTER WAS USED IN THE NUMERICAL
CALCULATION TO DETERMINE THE TRUE DIFFUSION COEFFICIENT FROM
THE MODEL OF PAUL ET AL. 10 REFS. 93513

FICKIAN DIFFUSION OF ALKANES THROUGH GLASSY POLYMERS :
EFFECTS OF TEMPERATURE, DIFFUSANT SIZE AND POLYMER STRUCTURE
82-03 03931L

CHEN, S. P. EDIN, J. A. D.

POLYM.ENGNG.SCI.,20,NO.1,MID-JAN.1980,P.40-50

DIFFUSIVITIES (D) RANGING OVER SIX ORDERS OF MAGNITUDE WERE OBTAINED USING A FERMEATION APPARATUS EMPLOYING A GAS FLOW METHOD AND A FLAME IONISATION DETECTOR. LOG D FOR HYDROCARBONS IN BISPHENOL A POLYCARBONATE (PC) AT 120C WAS PROPORTIONAL TO THE SQUARE OF THE MOLECULAR DIAMETER AS GIVEN BY THE LENNARD-JONES POTENTIAL. THIS CORRELATION HELD EVEN FOR THE NON-SPHERICAL N-HEXANE MOLECULE. ACTIVATION ENERGY FOR DIFFUSION WAS ALSO LINEARLY RELATED TO MOLECULAR DIAMETER, WITH VALUES OF 9.5 AND 23 KCAL/MOL FOR METHANE AND NEOPENTANE IN PC, RESPECTIVELY. THE DIFFUSION DATA DID NOT CORRELATE WITH THE TG OF SIMILAR POLYMERS OF HIGHER TG, BUT THE PRESENCE OF SUBSIDIARY TRANSITIONS APPEARED TO ENHANCE SEGMENTAL MOBILITY, INCREASING THE HYDROCARBON RATE OF DIFFUSION. 32 REFS. 43C12-93513

STATISTICAL MECHANICAL MODEL OF SORPTION AND DIFFUSION OF SIMPLE PENETRANTS IN POLYMERS 82-03 03932L

PACE, R. J. DATYNER, A.

POLYM.ENGNG.SCI.,20,NO.1,MID-JAN.1980,P.51-8

TWO POSSIBLE TYPES OF RANDOM MOTION FOR A SPHERICAL PENETRANT IN AN AMORPHOUS POLYMER ARE DESCRIBED, ONE TYPE DETERMINING THE JUMP FREQUENCY AND ACTIVATION ENERGY OF DIFFUSION, THE OTHER DETERMINING THE JUMP LENGTH. SORPTION OF SIMPLE GASES AT LOW PENETRANT PRESSURES IS ASSUMED TO OCCUR MOSTLY IN PRE-EXISTING HOLES, BOTH ABOVE AND BELOW TG, AND THE SAME PENETRANT DIFFUSION MECHANISM IS ASSUMED TO HOLD IN THE TWO REGIONS. CHANGES IN APPARENT HEAT OF SOLUTION AND ACTIVATION ENERGY OF DIFFUSION OBSERVED AT TG ARE EXPLAINED IN TERMS OF ADDITIONAL HOLE FORMATION WITH INCREASE IN TEMPERATURE ABOVE TG. EVIDENCE IS GIVEN THAT HOLE FORMATION IN SIMPLE POLYMERS SUCH AS PE MAY OCCUR BY CHAIN KINKING, WHILE FOR POLYMERS WITH ARTICULATED SIDE GROUPS IT APPEARS THAT HOLE FORMATION ARISES PRINCIPALLY FROM MOTIONS WITHIN THESE GROUPS. 26 REFS. 93513

SELECTION OF BARRIER MATERIALS FROM MOLECULAR STRUCTURE
82-03 03934L

LEE, W. M.

POLYM.ENGNG.SCI.,20,NO.1,MID-JAN.1980,P.65-9

A PREDICTION TECHNIQUE FOR GAS PERMEABILITY FROM POLYMER MOLECULAR STRUCTURE WAS DEVELOPED ON THE BASIS OF A SPECIFIC FREE VOLUME DIFFUSION THEORY, IN WHICH THE FREE VOLUME AVAILABLE PER UNIT MASS IN A POLYMER STRUCTURE CONTROLS THE RATE OF DIFFUSION AND, HENCE, THE RATE OF PERMEATION OF THE GAS. THE THEORY PREDICTS A LINEAR RELATIONSHIP BETWEEN LOG PERMEABILITY AND SPECIFIC VOLUME, AND A NUMBER OF POLYMERS COVERING SIX ORDERS OF MAGNITUDE IN CARBON DIOXIDE AND OXYGEN PERMEABILITY FOLLOWED THIS CORRELATION. THIS TECHNIQUE GREATLY SIMPLIFIES THE SELECTION OF BARRIER MATERIALS FOR PACKAGING APPLICATIONS. MOLECULAR STRUCTURES WITH STRONG POLAR-TO-POLAR INTERACTIONS AND HYDROGEN BONDING FORCES PROVIDE GOOD BARRIERS TO CARBON DIOXIDE AND OXYGEN.

13 REFS. 93513

OXYGEN TRANSMISSION THROUGH HIGHLY CROSSLINKED POLYMERS
82-03 03935L

GORDON, G. A. RAVVE, A.

POLYM.ENGNG.SCI.,20,NO.1,MID-JAN.1980,P.70-7

HIGHLY CROSSLINKED POLYMERS OF VARYING STRUCTURE WERE PRODUCED BY REACTION OF POLYGLYCIDYL ACRYLATE AND POLYGLYCIDYL METHACRYLATE WITH CHLORENDIC, GLUTARIC, MALEIC, SUCCINIC AND POLYMALONIC ANHYDRIDE CROSSLINKING AGENTS. TOPOLOGY WAS VARIED BY THE USE OF A DILUENT AND A COMONOMER IN THE BACKBONE CHAIN. OXYGEN PENETRATION MEASUREMENTS WERE MADE ON THESE POLYMERS COATED ONTO A PP FILM BEFORE CROSSLINKING. THE CROSSLINKING PROCESS GREATLY REDUCED THE OXYGEN PERMEABILITY WHICH, HOWEVER, WAS DEPENDENT NOT ONLY ON THE DEGREE OF CROSSLINKING BUT ALSO ON THE CROSSLINK DENSITY, THE CHEMICAL NATURE OF THE STRUCTURAL ELEMENTS, AND THE TOPOLOGY OF THE POLYMER NETWORK. 27 REFS.

42C35-55CAH-93513

VAPOUR-PHASE POLYMERISATION : I. FORMATION OF POLY (P-PHENYLENETEREPHTHALAMIDE GAS BARRIER COATINGS
82-02 02023L

IKEDA, R. M. ANGELO, R. J. BOETTCHER, F. P. BLOMBERG,
R. N. SAMUELS, M. R.

ORG.COATINGS PLAST.CHEM., VOL.41, SEPT.1979, P.287-92

THIN COATINGS OF POLYPHENYLENE TEREPHTHALAMIDE WERE
SYNTHESISED BY VAPOUR PHASE POLYCONDENSATION AND CONCURRENT
DEPOSITION ONTO A PET SUBSTRATE. THE COATINGS HAD GOOD
RESISTANCE TO PERMEATION BY OXYGEN AND WERE ALSO MOISTURE
RESISTANT. 5 REFS. 43C318-6A31-723

INVERSE GAS CHROMATOGRAPHY, A METHOD FOR STUDYING
POLYMER-MIGRANT INTERACTIONS IN POLYOLEFIN PACKAGING
MATERIALS 82-C2 02270L

SENICH, G. A. SANCHEZ, I. C.

ORG.COATINGS PLAST.CHEM., VOL.41, SEPT.1979, P.345-9

THE USE OF INVERSE PHASE GAS CHROMATOGRAPHY TO MEASURE THE
EXTENT OF MIGRATION OF AN IMPURITY OR ADDITIVE FROM A
POLYMERIC CONTAINER INTO ITS CONTENTS IS DISCUSSED. THE
SPECIFIC RETENTION VOLUME CAN BE USED TO CALCULATE THE
POLYMER-MIGRANT INTERACTION PARAMETERS WHICH WHEN COMBINED
WITH SOLUBILITY OF THE MIGRANT IN THE SOLVENT, ALLOWS THE
EQUILIBRIUM PARTITION COEFFICIENT TO BE CALCULATED. THE
DIFFUSION COEFFICIENT OF MIGRANT IN POLYMER CAN BE USED TO
ESTIMATE THE DEGREE OF MIGRATION DURING THE EXPECTED SHELF
LIFE. THERMODYNAMIC AND KINETIC EFFECTS ARE TAKEN INTO
CONSIDERATION. 19 REFS. 42C11-935T

EFFECT OF FILLERS ON THE PROPERTIES OF URETHANE POLYMERS
82-01 00264L

MAIK, M. KRYSZTAFKIEWICZ, A.

POLIM.TWORZ.WIELK.,26,NO.7,JULY 1981,P.245-7 LANG-
POLISH

THE DEPENDENCE OF POLYMER PROPERTIES ON FILLER CONTENT, ON COMPOSITION, THICKNESS AND DENSITY OF THE INTERPHASE LAYER AND ON SURFACE CHARACTERISTICS OF FILLER WAS INVESTIGATED. PARTICULAR ATTENTION WAS PAID TO SILICA FILLERS AND THEIR INFLUENCE ON THE PROPERTIES, E.G. MORPHOLOGY AND GAS PERMEABILITY, OF URETHANE POLYMERS. 35 REFS. 43C6-51SS-9 ARTICLES FROM THIS JOURNAL CAN BE REQUESTED FOR TRANSLATION BY SUBSCRIBERS TO THE RAPRA PRODUCED INTERNATIONAL POLYMER SCIENCE AND TECHNOLOGY

MODEL FOR PERMEATION OF MIXED GASES AND VAPOURS IN GLASSY POLYMERS 82-01 00520L

KOROS, W. J. CHERN, R. T. STANNETT, V. HOPFENBERG, H. B.

J.POLYM.SCI.POLYM.PHYS.,19,NO.10,OCT.1981,P.1513-30

A MODEL WAS DISCUSSED WHICH EXPLAINED COMPLEX EFFECTS OF FEED COMPOSITION AND PRESSURE ON COMPONENT PERMEABILITIES IN HIGH-PRESSURE GAS SEPARATORS BASED ON GLASSY POLYMER MEMBRANES. PERMEATION OF GAS MIXTURES WAS ANALYSED ON THE BASIS OF A FORM OF FICK'S LAW WHICH ACCOUNTS FOR THE FACT THAT PENETRANTS IN GLASSY POLYMERS SORB INTO AND DIFFUSE THROUGH TWO DIFFERENT MOLECULAR ENVIRONMENTS. POTENTIAL DEVIATIONS FROM THE THEORY WERE DISCUSSED IN TERMS OF SEPARABLE EFFECTS DUE TO GAS SOLUBILITY AND MOLECULAR MOBILITY. 47 REFS. 6M-93513

INFLUENCE OF PETROLEUM GAS ON THE DIFFUSION PROPERTIES OF
POLYMERIC MEMBRANES 81-12 79071L

OLENINA, Z. K. ERSHOV, B. N. BRESHCHENKO, E. M.

PLAST.MASSY, NO.5, 1980, P.29 LANG- RUSSIAN

A STUDY IS DESCRIBED OF THE PERMEABILITY OF A MEMBRANE MADE
FROM POLYPROPYLENE AND A FLUORINE-CONTAINING PLASTIC
UNIRRADIATED AND IRRADIATED WITH ARGON IONS AFTER PROLONGED
TREATMENT WITH PETROLEUM GAS. 5 REFS. 42C12-6M-93513
ARTICLES FROM THIS JOURNAL CAN BE REQUESTED FOR TRANSLATION
BY SUBSCRIBERS TO THE RAPRA PRODUCED INTERNATIONAL POLYMER
SCIENCE AND TECHNOLOGY

GAS PERMEATION THROUGH POROUS POLYMERIC MEMBRANE
81-11 77873L

KAMIDE, K. MANABE, S. NOHMI, T. MAKINO, H. KAWAI, T.

POLYM.PREPRINTS, 21, NO.2, AUG. 1980, P.90-2

THE GAS FLOW MECHANISM IN POLYMERIC MEMBRANES HAVING VARIOUS
TYPES OF PORE SIZE DISTRIBUTION WAS STUDIED. 11 REFS.
6M-93513

SILICONE RUBBER TECHNOLOGY REVIEW 81-11 76608C

POLMANTEER, K. E.

MINNEAPOLIS, MINN., JUNE 2-5, 1981, PAPER 1, PP. 64. PREPRINT.
012 PUBLCN. DETAILS- ACS, RUBBER DIV. 119TH
MEETING, SPRING 1981. PAPERS

A REVIEW IS PRESENTED OF THE CHEMICAL STRUCTURE, SYNTHESIS,
VULCANISATION, SOLUBILITY, SURFACE ENERGY, PERMEABILITY,
OXIDATION, HYDROLYSIS AND RHEOLOGICAL AND LOW TEMPERATURE
PROPERTIES OF SILICONE RUBBERS, INCLUDING
POLYDIMETHYLSILOXANE AND SILOXANE COPOLYMERS. FILLERS AND
THEIR EFFECTS ON MECHANICAL PROPERTIES ARE ALSO CONSIDERED.
28 REFS. 45C

PERMEATION OF GASES THROUGH MODIFIED POLYMER FILMS. V.
PERMEATION AND DIFFUSION OF HELIUM, NITROGEN, METHANE,
ETHANE AND PROPANE THROUGH GAMMA-RAY CROSSLINKED
POLYETHYLENE 81-11 76102L

MACDONALD, R. W. HUANG, R. Y. M.

J.APPL.POLYM.SCI.,26,NO.7,JULY 1981,P.2239-63

GAMMA-IRRADIATION OF PE FILMS WAS CARRIED OUT IN VACUUM,
ACETYLENE AND ACETYLENE-NITROGEN MIXTURES IN ORDER TO STUDY
THE CHANGES INDUCED IN EFFICIENCY OF CROSSLINKING AND
TRANSPORT PROPERTIES WITH IRRADIATION DOSE AND ATMOSPHERE.
PERMEABILITY AND DIFFUSION CONSTANTS WERE OBTAINED FOR
HELUM, NITROGEN, METHANE, ETHANE AND PROPANE AND THE
PLASTICISING EFFECT OF THE HYDROCARBON GASES INVESTIGATED.
50 REFS. 42C11-8953-93513

POLYMER BREAKS THE GAS BARRIER 81-10 75169L

PLAST.RUBB.WKLY.,NO.901,22ND AUG.1981,P.5 CORP. AUTH-
KANEKA FUCHI CHEMICAL INDUSTRY CO.

BRIEF DETAILS ARE PRESENTED ON KANEKA PARNEK, AN AMORPHOUS
ACRYLIC COPOLYMER, WHICH IS REPORTED TO HAVE EXCELLENT
CHEMICAL RESISTANCE AND HIGH GAS BARRIER PROPERTIES. THE
MATERIAL CAN BE INJECTION, EXTRUSION OR BLOW MOULDED, VACUUM
FORMED OR CALENDERED. APPLICATIONS, INCLUDING PACKAGING,
PUMPS, ELECTRICAL COMPONENTS AND PETROL CAPS, ARE MENTIONED.
42C351A-9351

DIFFUSION OF GASES IN GLASSY POLYMERS. II. DUAL SORPTION
THEORY 81-07 69357L

NAPP, S. J. PEPPAS, N. A.

POLYM.NEWS,7,NO.4,1981,P.174-7

THE ABILITY OF THE DUAL MODE THEORY TO PREDICT AND CORRELATE
A RANGE OF MASS TRANSPORT PROCESSES WHERE ONE POPULATION IS
IMMOBILE RELATIVE TO ANOTHER IS EXAMINED. 17 REFS. 93513

COMPARATIVE DERIVATOGRAPH TESTING OF THE THERMAL
DECOMPOSITION OF SUSPENSION PVC AND PVC POWDER POLYMERISED
IN BULK 81-06 68247L

BODRI, E. KOVACS, B. ZIEGLER, B.

MUANYAG ES GUMI., 18, NO. 3, 1981, P. 85-7 LANG- HUNGARIAN

DERIVATOGRAPH RECORDS SHOW THAT THE THERMAL DECOMPOSITION OF PVC PRODUCED BY BULK POLYMERISATION AND SUSPENSION POLYMERISATION IS EXOTHERMIC AND ENDOHERMIC, RESPECTIVELY. THE DIFFERENCE IS DUE TO THE PERICELLULAR SURFACE SKIN FOUND ON SUSPENSION PVC GRANULES WHICH HINDERS THE ACCESS OF OXYGEN, WHILE IN THE CASE OF BULK PVC GRANULES OXYGEN IS ABLE TO CONTACT PRIMARY GRANULES UNRESISTED. 9 REFS. 42C382-622-932 ARTICLES FROM THIS JOURNAL CAN BE REQUESTED FOR TRANSLATION BY SUBSCRIBERS TO THE RAPRA PRODUCED INTERNATIONAL POLYMER SCIENCE AND TECHNOLOGY

EFFECT OF TENSILE DEFORMATIONS ON CASE TRANSPORT IN GLASSY POLYMER FILMS 81-06 67207L

SMITH, T. L. ADAM, R. E.

POLYMER, 22, NO. 3, MARCH 1981, P. 299-304

THE EFFECT OF SIMPLE TENSILE DEFORMATIONS ON THE PERMEABILITY AND DIFFUSION COEFFICIENTS OF GASES IN GLASSY POLYMERS WAS STUDIED. THE FILMS USED WERE POLYCARBONATE AND POLYIMIDE WITH CARBON DIOXIDE AND NITROGEN. FOR NITROGEN IN PC THE COEFFICIENTS DECREASED WITH TIME AT CONSTANT STRAIN AND WERE PARTIALLY DEPENDENT ON STRAIN AND THERMAL HISTORIES. FOR CARBON DIOXIDE IN POLYIMIDE, THE COEFFICIENTS INCREASED WITH STRAIN UP TO 2% AT 125C AND THEN DECREASED, SHOWING A STRAIN-INDUCED RELAXATION. 41 REFS. 43C12-93513

EFFECT OF VARIOUS FACTORS ON THE PERMEABILITY OF GASES
THROUGH POLYMER FILMS. III. PROPERTIES OF FILMS PREPARED
FROM MODIFIED POLYSTYRENE AND PVC 81-05 65408L

KAMINSKA, A.

POLIM.TWORZ.WIELK.,25,NO.12,1980,P.442-4 LANG- POLISH

THE EFFECT OF METHYL METHACRYLATE-BUTADIENE-STYRENE
COPOLYMERS (MBS) AND SAN AS MODIFIERS ON THE PERMEABILITY TO
AIR OF FILMS OF PVC AND PS, AS WELL AS ON THE UV STABILITY
OF SUCH FILMS, WAS INVESTIGATED. ADDITION OF 1 TO 3% MBS OR
SAN WAS FOUND TO REDUCE THE PERMEABILITY OF PS AND INCREASE
THAT OF PVC; RESISTANCE TO UV IRRADIATION WAS REDUCED IN
BOTH POLYMERS. PERMEABILITY MEASUREMENT APPEARED TO BE A
SENSITIVE METHOD FOR DETECTING CHANGES IN THE STRUCTURE OF
POLYMERS. 5 REFS. 93513 ARTICLES FROM THIS JOURNAL CAN BE
REQUESTED FOR TRANSLATION BY SUBSCRIBERS TO THE RAPRA
PRODUCED INTERNATIONAL POLYMER SCIENCE AND TECHNOLOGY

DIFFUSION OF GASES IN GLASSY POLYMERS. I. FREE VOLUME AND
ENERGY FLUCTUATION THEORIES 81-05 66434L

NAPP, S. J. PEPPAS, N. A.

POLYM.NEWS,7,NO.3,JAN.1981,P.118-21

THE FREE VOLUME AND ENERGY FLUCTUATION THEORIES WHICH
DESCRIBE THE KINETICS OF GASEOUS TRANSPORT IN HOMOPOLYMERS
ARE BRIEFLY DISCUSSED. A MORE DETAILED DISCUSSION OF THE
DUAL SORPTION THEORY IS ALSO GIVEN. 12 REFS. 93513

BUTYL RUBBER AND ITS USE IN NON-TYRE APPLICATIONS
81-02 59593L

RITCHIE, K.

HULE MEX.PLAST.,36,NO.414,JULY 1980,P.5/18 LANG-
SPANISH

THE CHEMICAL STRUCTURE AND PREPARATION OF BUTYL RUBBER AND

HALOBUTYL RUBBERS IS DISCUSSED, AND THE MAIN PROPERTIES OF THESE MATERIALS ARE REVIEWED, I.E. GAS PERMEABILITY, THERMAL STABILITY, OZONE RESISTANCE, ENERGY ABSORPTION AND CHEMICAL RESISTANCE. ATTENTION IS ALSO PAID TO COMPOUNDING, CURING SYSTEMS AND OTHER COMPOUNDING INGREDIENTS. APPLICATIONS EXAMINED INCLUDE PHARMACEUTICAL STOPPERS, VEHICLE SUSPENSIONS, TANK LININGS, MEMBRANES, ELECTRICAL CONDUCTORS, POLYMERIC PROPERTY MODIFIERS FOR PLASTICS, FOOTBALL BLADDERS, SEALANTS AND CONVEYOR BELTING. FORMULATIONS FOR THESE APPLICATIONS ARE GIVEN, WITH PARTICULAR REFERENCE TO POLYMERS PRODUCED BY POLYSAR LTD. 7 REFS. 42C131D12

SELECTIVE TRANSPORT OF SULPHUR DIOXIDE THROUGH POLYMER MEMBRANES. I. POLYACRYLATE AND CELLULOSE TRIACETATE SINGLE LAYER MEMBRANES 81-01 58208L

KUEHNE, D. L. FRIEDLANDER, S. K.

IEC PROCESS DES.DEV.,19,NO.4,OCT.1980,P.609-16

COMMERCIAL SAMPLES OF POLYACRYLATE AND CELLULOSE TRIACETATE POLYMERS WERE FOUND TO BE SELECTIVELY PERMEABLE TO SULPHUR DIOXIDE GAS. ULTRA THIN FILMS WERE PREPARED TO ACHIEVE HIGH SO₂ FLUXES, REQUIRED FOR SO₂ GAS SEPARATORS. SO₂ PERMEABILITY HAD A LARGE PRESSURE DEPENDENCE, WHICH ADVERSELY AffECTED MEMBRANE PERFORMANCE. 18 REFS. 6M-93513

SELECTIVE TRANSPORT OF SULPHUR DIOXIDE THROUGH POLYMER MEMBRANES. II. CELLULOSE TRIACETATE/POLYACRYLATE COMPOSITE MEMBRANES 81-01 58209L

KUEHNE, D. L. FRIEDLANDER, S. K.

IEC PROCESS DES.DEV.,19,NO.4,OCT.1980,P.616-23

A NOVEL TECHNIQUE IS DESCRIBED FOR PREPARING POLYACRYLATE/CELLULOSE TRIACETATE POLYMER MEMBRANES FOR SO₂ GAS SEPARATIONS. SO₂ PERMEATION DATA WERE OBSERVED TO BE PRESSURE DEPENDENT. A CONTINUOUS FLOW SYSTEM WAS BUILT TO MODEL THE GAS FLOW IN A MEMBRANE SEPARATOR, AND SELECTED MEMBRANES WERE TESTED WITH BINARY MIXTURES OF N₂ AND SO₂. MEMBRANE PERFORMANCE WAS EVALUATED IN TERMS OF DESIGN GOALS FOR COMBUSTION AND SMELTER GAS APPLICATIONS. 6 REFS.

6M-93513

EFFECT OF VARIOUS FACTORS ON THE PERMEABILITY OF GASES
THROUGH POLYMER FILMS. II. CHANGES IN THE PERMEABILITY OF
AIR THROUGH POLYSTYRENE FILMS UNDER THE EFFECT OF UV
IRRADIATION 80-12 57154L

KAMINSKA, A. MLYNARCZYK, D.

POLIM.TWORZ.WIELK,25,NO.8,AUG.1980,P.289-90

POLISH. PHOTOCHEMICAL REACTIONS TAKING PLACE IN PS, WHICH
CHANGE THE MOLECULAR STRUCTURE AND THE STRUCTURE OF THE
FILMS, AFFECT THE PERMEABILITY OF PS FILMS. CROSSLINKING
DECREASES, AND DEGRADATION AND BRANCHING INCREASE THE
PERMEABILITY. THE DIFFERENCES IN CHANGES IN PERMEABILITY OF
PS FILMS OF DIFFERENT MOLECULAR WEIGHT AND POLYMOLECULARITY
SUGGEST THAT THE COURSE OF PHOTOCHEMICAL PROCESSES DEPENDS
ON BOTH THESE PARAMETERS. A DECREASE IN RESISTANCE TO THE
ACTION OF UV IRRADIATION IS OBSERVED WITH INCREASING PS
POLYMOLECULARITY. IT IS CONCLUDED THAT THE DETERMINATION OF
CHANGES IN PERMEABILITY OF FILMS MAY BE USED TO EXAMINE THE
COURSE OF PHOTOCHEMICAL PROCESSES IN POLYMER FILMS. 5 REFS.
ARTICLES FROM THIS JOURNAL CAN BE REQUESTED FOR TRANSLATION
BY SUBSCRIBERS TO THE RAPRA PRODUCED INTERNATIONAL POLYMER
SCIENCE AND TECHNOLOGY

GAS PERMEABILITY OF HIGH POLYMERS PARTICULARLY OF RUBBERS
80-12 57566L

SCHUCK, H.

KAUT.U.GUMMI KUNST.,33,NO.9,SEPT.1980,P.705-15

GERMAN. THE RUBBERS STUDIED INCLUDE POLYISOBUTYLENE,
SILICONE RUBBER AND NR. 17 REFS.

POLYMERISATION FROM THE VAPOUR PHASE. I.
POLY-P-PHENYLENETEREPHTHALAMIDE (PPTA) GAS BARRIER
COATINGS 80-11 55870L

IKEDA, R. M. ANGELO, R. J. BOETTCHER, F. P. BLOMBERG,
R. N. SAMUELS, M. R.

J.APPL.POLYM.SCI.,25,NO.7,JULY 1980,P.1391-405

AN ATMOSPHERIC-PRESSURE, VAPOUR-PHASE POLYMERISATION
TECHNIQUE WAS USED TO DEPOSIT THIN PPTA COATINGS ONTO SHEET
SUBSTRATES. A MINIMUM DEPOSITION TEMP. OF 170C WAS FOUND TO
BE CRITICAL. THESE COATINGS EXHIBITED GOOD OXYGEN BARRIER
PROPERTIES AND WERE FOUND TO CONSIST OF FUSED 0.1 MU M
PARTICULATES. SEM OF THE TOP SURFACES OF THE COATINGS
REVEALED THEIR PARTICULATE ORIGIN. SIMILAR EVIDENCE WAS
ALSO OBTAINED FROM SEM EXAMINATION OF FRACTURE SURFACES AND
TRANSMISSION ELECTRON MICROSCOPY OF MICROTOMED SECTIONS.
THE COALESCENCE OF THESE COATINGS WAS SHOWN BY SEM OF
PLASMA-ETCHED SURFACES AND OXYGEN PERMEABILITY DATA. THE
UNIPLANAR ORIENTATION OF THE POLYMER CRYSTALS IN THESE
COATINGS WAS STRONG EVIDENCE FOR THE EPITAXIAL GROWTH OF THE
CRYSTALS. 5 REFS.

POLYMER MEMBRANE ELECTRODE BASED POTENTIOMETRIC AMMONIA GAS
SENSOR 80-11 55922L

MEYERHOFF, M. E.

ANALYT.CHEM.,52,NC.9,AUG.1980,P.1532-4

A DESCRIPTION IS GIVEN OF THE INCORPORATION OF THE
ANTIBIOTIC NONACTIN INTO AN APPROPRIATE PLASTICISER/PVC
MEMBRANE ELECTRODE AND THEN USED AS THE INNER ELECTRODE IN A
GAS SENSING ARRANGEMENT FOR DISSOLVED AMMONIA. 7 REFS.

POSSIBLE MECHANISM OF SELECTIVITY OF DIFFUSION OF MOLECULAR
GASES IN POLYMERS 80-11 54673L

BRUEV, A. S.

POLYM.SCI.USSR,21,NO.5,1979,P.1256-66

A STUDY WAS MADE OF THE DIFFUSION OF NON-SPHERICAL MOLECULES
IN POLYMER FILMS. IT WAS SHOWN THAT THE CORRELATION BETWEEN
THE DIRECTION OF CHANGE IN DIFFUSION AND MOLECULAR
ORIENTATION IN THE CASE OF DIATOMIC AND LINEAR MOLECULES
COULD INCREASE THE RATE OF DIFFUSION TRANSFER. RESULTS WERE
IN AGREEMENT WITH EXPERIMENTAL DATA CONCERNING THE DIFFUSION
OF MOLECULAR GASES IN POLYMERS. 25 REFS.

ELASTOMERE AUF BASIS ATHYLEN-PROPYLEN 80-10 53121A

42C11C12 CORP. AUTH- WIRTSCHAFTSVERBAND DER DEUTSCHER
KAUTSCHUKIND. PUBLCN. DETAILS- GRUNES BUCH 39

GERMAN. THIS BOOK CONTAINS SECTIONS ON THE POLYMERISATION
OF ETHYLENE-PROPYLENE RUBBER, MONOMERS, CATALYSTS AND
POLYMERISATION KINETICS; THE MOLECULAR STRUCTURE AND
MORPHOLOGY OF THE ELASTOMERS, E.G. MW, TG, CRYSTALLINITY,
RHEOLOGICAL PROPERTIES, THE VULCANISATION OF EPM AND EPDM,
CURING AGENTS AND CROSSLINKING REACTIONS, PROCESSING,
EXTRUSION, CALENDERING, MIXING, FILLERS AND ADDITIVES,
BLENDs OF THE ELASTOMERS WITH OTHER POLYMERS, CHEMICAL
RESISTANCE, AGEING, FLAMMABILITY, GAS PERMEABILITY, BLOCK
COPOLYMERS, AND THERMOPLASTIC ELASTOMERS BASED ON
ETHYLENE-PROPYLENE, AND APPLICATIONS FOR ETHYLENE PROPYLENE
ELASTOMERS, E.G. BUILDING APPLICATIONS, SEALING STRIPS,
SPORTS SURFACES, ELECTRIC CABLES, PROTECTIVE COATINGS AND
ADHESIVES. A LIST OF PATENTS AND DETAILS OF FORMULATIONS
ARE GIVEN. 863 REFS.

OPPORTUNITIES IN ORIENTED NITRILE RESIN CONTAINERS
80-09 52281L

CARLSON, J. A. BORLA, L.

MOD.PLAST.INT., 10, NO. 6, JUNE 1980, P. 38-40

CONSIDERATION IS GIVEN TO THE PRODUCTION OF BOTTLES AND OTHER CONTAINERS FOR BEVERAGES, FOODSTUFFS, ETC., BY ORIENTATION BLOW MOULDING OF ACRYLONITRILE COPOLYMERS, I.E. COPOLYMERS OF ABOUT 70% ACRYLONITRILE WITH ACRYLATES OR STYRENE, POSSIBLY CONTAINING ELASTOMERIC IMPACT MODIFIERS. THE ACRYLONITRILE MONOMER PROVIDES HIGH TENSILE STRENGTH, STIFFNESS, GAS BARRIER AND CHEMICAL RESISTANCE PROPERTIES, AND THE COMONOMER CONTRIBUTES PROCESSIBILITY. DATA ARE PRESENTED ON TEMPERATURE AND DRAW RATIO FACTORS WHICH CONTROL ENHANCEMENT OF MECHANICAL PROPERTIES AND PERMEABILITY CHARACTERISTICS DURING ORIENTATION. COMMERCIALLY AVAILABLE COPOLYMERS ARE BAREX 210 (VISTRON CORP.) AND SOLTAN (SOLVAY & CIE.). DEVELOPMENTS IN PROCESSING METHODS AND MARKET POTENTIALS FOR SUCH CONTAINERS ARE SURVEYED.

GAS EDUS DIFFUSION AND PERMEATION IN CLOSED-CELL POLYMERIC FOAMS 80-09 52620C

MEHTA, B. S. COLOMBO, E. A.

WASHINGTON, D.C., APRIL 1978, P. 689-92. CONFER. 012 PUBLCN. DETAILS- SOC.PLAST.ENGRS. 36TH ANNUAL TECHNICAL CONFERENCE

A QUANTITATIVE EXPLANATION IS PRESENTED OF THE EFFECT OF TEMP., BLOWING GAS CONCENTRATION AND STRUCTURAL CHARACTERISTICS, SUCH AS CELL SIZE AND CELL ORIENTATION, ON GASEOUS DIFFUSION AND PERMEATION OF CLOSED-CELL PS FOAM. 8 REFS. 42C21-6124-93513

GAS PERMEABILITY OF POLYMERIC MEMBRANES 80-08 51719L

BELEN'KAYA, N. M. BUBLEVSKII, I. M. GARNIZOVA, A. N.

PLAST.MASSY, NO.10,1979,P.60

RUSSIAN. 2 REFS. ARTICLES FROM THIS JOURNAL CAN BE REQUESTED FOR TRANSLATION BY SUBSCRIBERS TO THE RAPRA PRODUCED INTERNATIONAL POLYMER SCIENCE AND TECHNOLOGY

PERMEATION OF GASES AND VAPOURS THROUGH POLYMER FILMS AND THIN SHEET. I. 80-08 51211L

LOMAX, M.

POLYM.TEST.,1,NO.2,APRIL/JUNE 1980,P.105-47

A REVIEW IS MADE OF TECHNIQUES FOR MEASURING THE PERMEATION OF GASES AND VAPOURS THROUGH POLYMER FILMS AND THIN SHEETS. 67 REFS.

EFFECT OF VARIOUS FACTORS ON GAS PERMEABILITY OF POLYMERIC FILMS. I. AIR PERMEABILITY OF POLYSTYRENE FILMS

80-07 50126L

KAMINSKA, A.

POLIM.TWORZ.WIELK.,25,NO.2,FEB.1980,P.47-8

POLISH. THE PERMEABILITY TO AIR OF PS FILMS PREPARED BY CASTING POLYMER SOLUTIONS ON GLASS PLATES AND EVAPORATING THE SOLVENT WAS DETERMINED. FILMS WERE PREPARED FROM PS FRACTIONS OF DIFFERENT MOLEC.WT. AND FROM MIXTURES OF FRACTIONS EXHIBITING SIMILAR INTRINSIC VISCOSITY BUT DIFFERENT POLYDISPERSITY. AIR PERMEABILITY WAS FOUND TO INCREASE WITH INCREASE IN MOLEC.WT. AND WITH BROADENING OF MWD. 18 REFS. ARTICLES FROM THIS JOURNAL CAN BE REQUESTED FOR TRANSLATION BY SUBSCRIBERS TO THE RAPRA PRODUCED INTERNATIONAL POLYMER SCIENCE AND TECHNOLOGY

GAS PERMEABILITY OF METALLISED POLYMER FILMS
80-06 48608L

KAPANIN, V. V. REITTLINGER, S. A. STRUNINA, O. B.
PRILIPOV, V. V.

VYS.SOED.B,19,NO.12,DEC.1977,P.903-8

RUSSIAN. THE GAS PERMEABILITY OF A LAMINATE CONSISTING OF PE FILM SANDWICHED BETWEEN, ON EACH SIDE, A LAYER OF ALUMINIUM AND A LAYER OF PETP WAS INVESTIGATED AND PROMISING RESULTS OBTAINED. 5 REFS.

DETERMINATION OF THE SOLUBILITY OF GASES IN POLYMER FILMS BY GAS CHROMATOGRAPHY 80-06 48962L

KAPANIN, V. V. SIROTIN, Y. A. D. REITTLINGER, S. A.
PRILIPOV, V. V.

POLYM.SCI.USSR,21,NO.2,1979,P.500-2

SOLUBILITY COEFFICIENTS ARE DETERMINED FOR HELIUM, OXYGEN, ARGON AND NITROGEN IN LDPE FILMS. THESE RESULTS SHOWED SATISFACTORY AGREEMENT WITH RESULTS IN THE LITERATURE. 9 REFS.

INFLUENCE OF ADDITION OF OLIGOMER IC VINYLALKYLDIMETHYL SILANES ON THE GAS PERMEABILITY OF POLYVINYL TRIMETHYLSILANE
80-06 49196L

EVSEENKO, A. L. TEPLYAKOV, V. V. DURGAR'YAN, S. G.
NAMETKIN, N. S.

VYS.SOED.B,21,NO.2,1979,P.153-5

RUSSIAN. 5 REFS. ARTICLES FROM THIS JOURNAL CAN BE REQUESTED FOR TRANSLATION BY SUBSCRIBERS TO THE RAPRA PRODUCED INTERNATIONAL POLYMER SCIENCE AND TECHNOLOGY

IRRADIATION EFFECT ON GAS DIFFUSION IN POLYMER FILMS. I.
HYDROGEN DIFFUSION THROUGH MYLAR FILM 80-06 47953C

RAO, K. A. PUSHPA, K. K. IYER, R. M.

GUJARAT, FEB. 1979, PP. 1. CONFER. 012 PUBLCN. DETAILS-
INDIA, BOARD OF RES. NUCLEAR SCI. INDUS. POLYM. & RADIAT. SYMPOS.
(ABSTRACT ONLY). 43C112-625-93513

ISOTOPE EFFECT IN THE DIFFUSION OF HYDROGEN AND DEUTERIUM IN
POLYMERS 80-06 48299L

TOI, K. TAKEUCHI, K. TOKUDA, T.

J. POLYM. SCI. POLYM. PHYS., 18, NO. 2, FEB. 1980, P. 189-98

TEMPERATURE DEPENDENCES OF DIFFUSION AND PERMEATION
COEFFICIENTS OF HYDROGEN AND DEUTERIUM IN GLASSY AND RUBBERY
POLYMER FILMS WERE MEASURED. THE SIZE OF THE FREE VOLUME
ELEMENT IN RUBBERY POLYMERS WAS CALCULATED ACCORDING TO THE
THEORY OF FRISCH AND ROGERS FOR THE QUANTUM ISOTOPE EFFECT,
BUT THE FREE VOLUME WAS TOO LARGE FOR PRECISE CALCULATION
BELOW THE TG. THE COOPERATIVE MOVEMENT OF SEGMENTS IS ALSO
DISCUSSED USING THE RATIO OF PRE-EXPONENTIAL FACTORS FOR
DIFFUSION MECHANISMS ABOVE AND BELOW THE TG. 7 REFS. 93513

ENTROPY CORRELATION THEORY AND DIFFUSION MEASUREMENTS FOR
ORIENTED POLYMERS 80-04 45453L

BARKER, R. E. TSAI, R. C. WILLENCY, R. A.

J. POLYM. SCI. POLYM. SYMP., NO. 63, 1978, P. 109-29

THE ENTROPY CORRELATION THEORY PREDICTS THAT ANY STRUCTURAL
CHANGE WHICH DECREASES THE CONFIGURATIONAL ENTROPY OF A
COMPLEX MOLECULAR SYSTEM WILL LEAD TO AN APPROXIMATELY EQUAL
INCREASE IN THE ACTIVATION ENTROPY FOR STRUCTURALLY
CONTROLLED RATE PROCESSES SUCH AS DIFFUSION. CONFIRMATION
OF THE THEORY IS PRESENTED FOR THE CASE OF GAS DIFFUSION IN
PERMANENTLY STRETCHED POLYMERIC MEMBRANES. SYSTEMS

INVESTIGATED INCLUDED REPRESENTATIVE POLYALKYL METHACRYLATES
AND A SELECTION OF NON-POLAR AND POLAR GASES. 35 REFS.
93513

ENERGETICS OF GAS SORPTION IN GLASSY POLYMERS
79-12 39757L

KOROS, W. J. PALL, D. R. HUVARD, G. S.

POLYMER, 20, NO. 8, ALG. 1979, P. 956-60

AN ANALYTICAL EXPRESSION WAS DERIVED FOR PREDICTION OF THE
MOLAR ENTHALPY OF SORPTION AT CONSTANT CONCENTRATION IN DUAL
MODE SORPTION SYSTEMS. THE EXPRESSION WAS SHOWN TO PROVIDE
A GOOD DESCRIPTION OF DATA DERIVED BY FORMAL THERMODYNAMIC
ANALYSIS OF CARBON DIOXIDE SORPTION ISOTHERMS IN PETP. 13
REFS. 93513

PERMEABILITY OF METALLISED POLYMER FILMS. I. METHOD FOR GAS
PERMEABILITY MEASUREMENT 79-12 39758L

SPRINGER, J. BRITO, H.

J. APPL. POLYM. SCI., 24, NO. 2, 15TH JULY 1979, P. 329-37

GERMAN. THE CONSTRUCTION AND OPERATION OF AN APPARATUS FOR
THE DETERMINATION OF GAS PERMEABILITY THROUGH METALLISED
POLYMER FILMS IS DESCRIBED. THE TEST GASES (NITROGEN,
OXYGEN AND CARBON DIOXIDE) PENETRATE UNDER PRESSURE
DIFFERENCES FROM 100 TORR TO 20 BAR THROUGH METALLISED ABS
FILMS. THE METAL LAYERS CONSIST OF CHEMICALLY DEPOSITED
NICKEL AND GALVANIC DEPOSITED COPPER. THE QUANTITY OF
PERMEATED GASES IS DETERMINED BY GAS CHROMATOGRAPHY, AND
LEAK EFFECTS CAN BE MEASURED QUANTITATIVELY. THE
PERMEABILITY OF GAS MIXTURES, I.E. AIR, CAN ALSO BE
INVESTIGATED. THE APPARATUS ALLOWS THE DETERMINATION OF
EXTREMELY LOW PERMEABILITY RATES AS WELL AS THOSE FOR
CONVENTIONAL POLYMER SYSTEMS. 29 REFS. 293513T

PROPERTIES AND APPLICATIONS OF POLYMER ALLOYS
79-11 38007L

GRECO, R. MARTUSCELLI, E.

CHIMICA E IND., 61, NO. 4, APRIL 1979, P. 298-309.

ITALIAN. THE CLASS OF MATERIALS CONSIDERED INCLUDES POLYMER BLENDS, GRAFT COPOLYMERS, BLOCK COPOLYMERS AND INTERPENETRATING POLYMER NETWORKS. AN EXAMINATION IS MADE OF THERMODYNAMIC COMPATIBILITY, HOMOGENEITY, ELASTIC MODULUS, RUPTURE RESISTANCE, IMPACT PROPERTIES, ABRASION RESISTANCE, THERMAL PROPERTIES, THERMAL AND LIGHT DEGRADATION, FLAMMABILITY, GAS AND VAPOUR PERMEABILITY OF FILMS AND MEMBRANES, CRYSTALLISATION KINETICS, RECYCLING, AND COUPLING AGENTS. MAJOR PROBLEMS TO BE SOLVED INCLUDE HETEROGENEITY AND INCOMPATIBILITY, AND COUPLING AGENTS AND/OR INTERFACIAL PROPERTY MODIFIERS NEED TO BE DEVELOPED.

36 REFS. 6125

WEATHERING PROPERTIES OF POLYMERS IN CABLES 79-11 38147L

CHEVASSUS, F.

HULE MEX.PLAST., 34, NO. 397, FEB. 1979, P. 5/20

SPANISH. A DETAILED STUDY IS MADE OF THE EFFECTS OF WEATHERING ON RUBBER AND PLASTICS CABLE INSULATION, WITH REFERENCE TO CABLES OF ALL TYPES. THE ACTION OF LIGHT AND OF LIGHT STABILISERS, HUMIDITY, OZONE AND OTHER GASES IS CONSIDERED FOR DIFFERENT POLYMERS, AND ELECTRICAL PROPERTIES ARE DISCUSSED. 6E1-93

EVAPORATION OF POLYMER- SOLVENT MIXTURES. DETERMINATION OF VAPOUR PRESSURES FROM GAS EOS DIFFUSION COEFFICIENTS
79-10 37611L

COCA, J. BUENO, J. L. ALVAREZ, R.

POLYM.BULL.,1,NO.7,MAY 1979,P.459-64

THE STEFAN-WINKELMANN DIFFUSION TECHNIQUE WAS USED TO DETERMINE VAPOUR PRESSURES OF HIGH BOILING POINT COMPOUND/SOLVENT MIXTURES. DATA ARE REPORTED AT A TEMP. OF 67C FOR THE MIXTURES POLYPHENYL ETHER (6 RINGS)/BENZENE AND CARBOWAX 1500/BENZENE AND AT 100C FOR POLYPHENYL ETHER/TOLUENE AND TRICRESYL PHOSPHATE/TOLUENE. THE RANGE OF CONCENTRATION WAS ONLY LIMITED BY THE APPEARANCE OF A SOLID PHASE AND RESULTS WERE IN GOOD AGREEMENT WITH THOSE DETERMINED BY VAPCUR-PRESSURE OSMOMETRY. 6 REFS.

43C52-93513T

EVALUATION OF RESULTS OF SIMPLIFIED DETERMINATION METHODS OF POLYMER MEMBRANE PERMEABILITY TO VAPOURS 79-10 36773L

IZYDORCZYK, J. PODKOWKA, J. SALWINSKI, J.

J.APPL.POLYM.SCI.,23,NO.8,15TH APRIL 1979,P.2265-9

PERMEABILITY COEFFICIENTS FOR SOME SELECTED SYSTEMS COMPRISING A POLYMER MEMBRANE AND ORGANIC VAPOURS WERE MEASURED BY SIMPLIFIED METHODS, WITH THE AIM OF EVALUATING THE SUITABILITY OF THESE TECHNIQUES FOR MEMBRANE PERMEABILITY DETERMINATION UNDER AVERAGE CONDITIONS OF USE. RESULTS OBTAINED BY WEIGHED CELL, CAPILLARY EVAPORATION AND ELECTROCHEMICAL METHODS WERE COMPARED AND ANALYSED, TAKING INTO ACCOUNT PERMEATION MODELS ASSOCIATED WITH DIFFERENT APPARATUS AND OPERATION PRINCIPLES AS WELL AS DIFFERENT MEASURING CONDITIONS. FOR SIMILAR MASS TRANSFER MODELS, PERMEABILITY COEFFICIENT VALUES OF THE SAME ORDER AND CLOSE ACCURACY OF MEASUREMENT WERE OBTAINED. 8 REFS. 6M-93513

PERMEABILITY OF OXYGEN THROUGH POLYMERS. I. A NOVEL
SPECTROPHOTOCHEMICAL METHOD 79-10 36776L

PETRAK, K.

J. APPL. POLYM. SCI., 23, NO. 8, 15TH APRIL 1979, P. 2365-71

A NEW METHOD FOR THE MEASUREMENT OF OXYGEN PERMEABILITY THROUGH POLYMER MEMBRANES IS BASED ON MONITORING THE SENSITISED PHOTO-OXYGENATION OF A SINGLET OXYGEN ACCEPTOR IN A DETECTOR LAYER SANDWICHED BETWEEN A SUPPORT AND THE POLYMER LAYER. THE DETECTOR LAYER CONTAINS A SENSITISER WHICH ON IRRADIATION PRODUCES SINGLET EXCITED OXYGEN FROM THE GROUND-STATE OXYGEN AVAILABLE. THE SINGLET OXYGEN REACTS WITH AN OXYGEN ACCEPTOR, THE DISAPPEARANCE OF WHICH CAN BE FOLLOWED BY SPECTROPHOTOMETRY. IN THE PHOTOSTATIONARY STATE, CHANGES IN ACCEPTOR ABSORBANCE ARE DIRECTLY RELATED TO THE OVERALL FLUX OF OXYGEN THROUGH THE MEMBRANE. THE PERMEATION COEFFICIENT OF OXYGEN IS PROPORTIONAL TO THE RATE OF CHANGE IN ACCEPTOR ABSORBANCE AND TO THE INVERSE OF THE OXYGEN CONCENTRATION IN THE SURROUNDING ATMOSPHERE. OXYGEN PERMEABILITY WAS MEASURED FOR A GROUP OF WATER-SOLUBLE POLYMERS. 13 REFS. 6M-93513T

INFLUENCE OF THE STRUCTURAL ISOMERISM OF A POLYMER ON THE PERMEABILITY DIFFUSION AND SOLUBILITY OF HELIUM, HYDROGEN, NEON AND ACETONE VAPOUR 79-10 36895L

TIKHOMIROV, B. P. POLYAK, M. A.

IZV. VUZ. KH. I KH. TEKH., 22, NO. 2, 1979, P. 211-4

RUSSIAN. A STUDY IS DESCRIBED OF THE PERMEABILITY OF POLYMETHYL ACRYLATE (PMA) TO HELIUM, HYDROGEN AND NEON, AND THE DIFFUSION AND SOLUBILITY COEFFICIENTS IN THE GLASS TRANSITION TEMPERATURE RANGE WERE DETERMINED. THE ACTIVATION ENERGY OF DIFFUSION OF ACETONE INTO PMA, AND THE COEFFICIENT OF DIFFUSION, ARE COMPARED WITH THOSE FOR PVAC, AND REASONS FOR THE DIFFERENCE ARE ADVANCED. 5 REFS. 42C35111-93513 ARTICLES FROM THIS JOURNAL CAN BE REQUESTED FOR TRANSLATION BY SUBSCRIBERS TO THE RAPRA PRODUCED INTERNATIONAL POLYMER SCIENCE AND TECHNOLOGY

GAS-PERMEABILITY OF POLYMERIC PACKAGING FILM
79-08 35301L

DODONOV, A. M. MURAVIN, YA. G.

PLAST.MASSY, NO.12,1978,P.53

RUSSIAN. DATA ARE PRESENTED ON THE GAS PERMEABILITY OF PACKAGING MATERIALS, TOGETHER WITH A DESCRIPTION OF A DEVICE USED FOR TESTING THIS PROPERTY. 2 REFS. 6P11-93513 ARTICLES FROM THIS JOURNAL CAN BE REQUESTED FOR TRANSLATION BY SUBSCRIBERS TO THE RAPRA PRODUCED INTERNATIONAL POLYMER SCIENCE AND TECHNOLOGY

DIFFUSION OF GASES THROUGH POLYURETHANE BLOCK POLYMERS
79-08 35444L

MCBRIDE, J. S. MASSARO, T. A. COOPER, S. L.

J.APPL.POLYM.SCI.,23,NO.1,1ST JAN.1979,P.201-14

THE DIFFUSIVITIES OF SIMPLE GASES THROUGH A SERIES OF PU BLOCK COPOLYMERS OF DIFFERING AROMATIC URETHANE CONTENT AND TYPE OF SOFT SEGMENT WERE MEASURED USING A QUADRAPOLE MASS SPECTROMETER AS A DETECTING DEVICE. ALTHOUGH AN ARRHENIUS EXPRESSION GENERALLY DESCRIBED THE TEMP. DEPENDENCE OF DIFFUSION IN THIS SYSTEM, A DISCONTINUITY WAS OBSERVED IN THE ARRHENIUS PLOTS FOR SOME MATERIALS AND THE DISCONTINUITY WAS FOUND TO BE RELATED TO THE ONSET OF THE TG IN THE HARD DOMAINS. POLYESTER-URETHANES HAD LOWER ACTIVATION ENERGIES FOR DIFFUSION THAN POLYETHER-URETHANES OF SIMILAR HARD SEGMENT COMPOSITION. 36 REFS. 43C6-93512

DIFFUSION CELL FOR THE STUDY OF GAS TRANSFER THROUGH REINFORCED POLYMER MATERIALS 79-06 32784L

KAPANIN, V. V. PRILIPOV, V. V.

POLYM.SCI.USSR,19,NO.5,1977,P.1345-8

A DIFFUSION CELL WAS DESIGNED TO EXAMINE GAS TRANSFER

THROUGH REINFORCED FILM MATERIALS OVER A WIDE RANGE OF TEMPERATURES. THE GAS PERMEABILITY OF RUBBERISED FABRICS OF TERYLENE, LAVSAN (PETP) AND COTTON WAS STUDIED IN THE TEMP RANGE 20-80C. IT WAS SHOWN THAT THE LOGARITHMIC DEPENDENCE OF PERMEABILITY ON INVERSE TEMP. IS NON-LINEAR. THE EFFECTIVE ACTIVATION ENERGY OF PERMEABILITY WAS DETERMINED FOR THE TEMP. RANGE OF 20-40C. 3 REFS. 628-93513T

BARRIER POLYMERS 79-06 32280C

SALAME, M. STEINGISER, S.

NEW YORK, APRIL 1976, P.18-28. CONFER. 012 PUBLCN. DETAILS-
ACS, CHEM. MARKET. & ECON. DIV.
HISTORICAL...CHEM. MARKET...SYMPOSIA

THE PERMEABILITY OF POLYMERS AS DETERMINED BY STRUCTURAL AND MORPHOLOGICAL PROPERTIES OF BOTH THE POLYMER MATRIX AND THE PERMEATING SPECIES IS DISCUSSED. THE CHARACTERISTICS OF HIGH BARRIER POLYMERS ARE RESISTANCE TO GAS FLOW (OF OXYGEN, CARBON DIOXIDE AND NITROGEN) LIQUID (WATER) FLOW, AND RESISTANCE TO ABSORPTION OF ORGANIC MOLECULES. THE CALCULATION AND USE OF PERMACHLOR VALUES IN PREDICTING PERMEABILITY AND THE BARRIER PROPERTIES AND APPLICATIONS OF HIGH BARRIER POLYMERS E.G. SAN ARE DESCRIBED. DETAILS OF OTHER POLYMERS ARE PRESENTED IN TABULAR FORM. 12 REFS.
6L-9351

APPARATUS FOR STUDYING THE GAS PERMEABILITY OF POLYMERS
79-02 28108L

SILONOV, YU. A. KOLESNIKOV, A. N.

PLAST.MASSY, NO. 8, 1978, P. 67-8

RUSSIAN. A LABORATORY APPARATUS FOR TESTING THE GAS PERMEABILITY OF POLYMERIC MATERIALS UNDER VACUUM AND HIGH PRESSURE AT VARIOUS TEMPERATURES IS DESCRIBED. 2 REFS.
293513T ARTICLES FROM THIS JOURNAL CAN BE REQUESTED FOR TRANSLATION BY SUBSCRIBERS TO THE RAPRA PRODUCED INTERNATIONAL POLYMER SCIENCE AND TECHNOLOGY

DETERMINATION OF PERMEABILITY OF POLYMERIC MEMBRANES
78-12 24850L

TEPLYAKOVA, V. V. EVSENKO, A. L. NOVITSKII, E. G.
DURGAR'YAN, S. G.

PLAST.MASSY, NO.5, 1978, P.49-51

RUSSIAN. METHODS ARE PRESENTED FOR DETERMINING THE GAS PERMEABILITY OF POLYMERIC MEMBRANES, INCLUDING INTEGRAL AND DIFFERENTIAL VARIANTS OF MEASUREMENT OF THE COEFFICIENTS OF PERMEABILITY AND DIFFUSION OF GASES IN POLYMERS, USING GAS CHROMATOGRAPHS OVER A WIDE RANGE OF TEMPERATURES, PRESSURES AND STREAMS OF PENETRANT. THE COEFFICIENTS OF PERMEABILITY AND DIFFUSION OF VARIOUS GASES IN POLYVINYLTRIMETHYLSILOXANE ARE GIVEN. 12 REFS. 6M-93513T ARTICLES FROM THIS JOURNAL CAN BE REQUESTED FOR TRANSLATION BY SUBSCRIBERS TO THE RAPRA PRODUCED INTERNATIONAL POLYMER SCIENCE AND TECHNOLOGY

NOVEL TECHNIQUE FOR MEASURING THE DIFFUSION CONSTANT OF OXYGEN IN POLYMER FILMS 79-01 26081L

MACCALLUM, J. R. RUDKIN, A. L.

EUR.POLYM.J., 14, NO.9, 1978, P.655-6

A SIMPLE TECHNIQUE IS DESCRIBED FOR THE MEASUREMENT OF THE DIFFUSION CONSTANT FOR OXYGEN IN POLYMERIC GLASSES, AND MEASURED VALUES FOR PS AND PMMA ARE REPORTED. MEASUREMENTS MAY BE MADE OVER A WIDE RANGE OF TEMPERATURES. 3 REFS.
93513T

CHARACTERISATION OF POROUS POLYMERIC MEMBRANES BY GAS PERMEABILITY 79-01 26459L

NOHMI, T. MANABE, S. KAMIDE, K. KAWAI, T.

KOBUNSHI RONBUN., 35, NO.8, AUG. 1978, P.509-16

JAPANESE. AN ATTEMPT WAS MADE TO ESTABLISH A METHOD FOR ESTIMATING THIRD AND FOURTH AVERAGE PORE RADII AND PORE SIZE

FREQUENCY DISTRIBUTION FROM EXPERIMENTAL DATA ON GAS
PERMEABILITY COEFFICIENT OF POROUS MEMBRANES. 7 REFS.
6M-93513

INTRODUCTION OF PLASTICS IN BIOGAS 79-01 26881L

KALIA, A. K. SINGH, R. B.

POP.PLAST.,23,NO.4,APRIL 1978,P.52-5

THE FINDINGS ARE FRESENTED OF TESTS INTO THE SUITABILITY OF
POLYMERS SUCH AS PVC, SYNTHETIC RUBBER AND NYLON FOR THE
STORAGE AND TRANSPORTATION OF GAS DERIVED FROM DUNG AND
OTHER ORGANIC WASTES. RIGID PVC SHEET WAS FOUND TO BE
SUITABLE AS A GAS HOLDER, AND PVC/NYLON LAMINATED SHEET
WORKED SATISFACTORILY FOR THE TRANSPORTATION OF THE GAS. 1
REF. 63AG

PROBLEM OF DETERMINATION OF THE CONCENTRATION DEPENDENCE OF
THE COEFFICIENT CF ACETONE DIFFUSICK IN POLYMERS

79-01 27117L

BELYAYEV, O. F. VOYEVODSKII, V. S. BEZRUKAVNIKOVA, L. M.
MAIZELIS, B. A.

POLYM.SCI.USSR,18,NO.6,1976,P.1543-7

A STUDY WAS MADE CF LATEX FILMS BASED ON POLYISOPRENE,
POLYCHLOROPRENE AND NITRILE RUBBERS TO DETERMINE THEIR
PERMEABILITY TO ACETONE VAPOUR. DIFFUSION COEFFICIENTS WERE
OBTAINED FOR DIFFERENT SOLVENT CONCENTRATIONS USING A
PROPOSED METHOD FOR CALCULATING THE CONCENTRATION DEPENDENCE
OF THE COEFFICIENTS. 8 REFS. 93513

METHOD OF MEASURING THE DIFFUSION AND SOLUBILITY OF GASES IN
POLYMERS 79-C1 27119L

SAPOZHNIKOV, D. N. SHLYAKHOV, R. A. TOCHIN, V. A.

PLAST.MASSY, NO.6, 1978, P.68-70

RUSSIAN. 8 REFS. 93513T ARTICLES FROM THIS JOURNAL CAN BE
REQUESTED FOR TRANSLATION BY SUBSCRIBERS TO THE RAPRA
PRODUCED INTERNATIONAL POLYMER SCIENCE AND TECHNOLOGY

LIQUID POLYSULPHIDE POLYMERS 78-09 21549L

WILHELM, G.

ADHASION, 22, NO.5, MAY 1978, P.156-60

GERMAN. THE AUTHOR REVIEWS CHEMICAL COMPOSITION AND
PROPERTIES OF THE THIOKOL RANGE OF LIQUID POLYSULPHIDE
POLYMERS. DIFFERENCES IN CROSSLINK DENSITY RESULT IN
POLYMERS OF DIFFERENT VISCOSITY, BUT ALL CONTAIN MERCAPTO
AND GROUPS WHICH PERMIT CURING BY ATMOSPHERIC OXIDATION OR
BY OXIDATION BY MEANS OF METAL OXIDES OR ORGANIC PEROXIDES.
CURE RATE CAN BE CONTROLLED CHEMICALLY BY MEANS OF ADDITIVES
AND THE POLYMERS CAN BE USED TOGETHER WITH
PHENOL-FORMALDEHYDE, POLYESTER OR EPOXY RESINS.
TOXICOLOGICAL PROPERTIES, STRENGTH, ELECTRICAL PROPERTIES,
GAS AND WATER PERMEABILITY, ADHESIVE PROPERTIES AND THERMAL
AND SOLVENT STABILITY ARE DISCUSSED, AND A RANGE OF
APPLICATIONS REVIEWED. 32 REFS. 43C52-8962

MECHANISM OF GAS PERMEATION THROUGH POROUS POLYMERIC
MEMBRANES 78-C9 20897L

NOHMI, T. MAKINO, H. MANABE, S. KAMIDE, K. KAWAI, T.

KOBUNSHI RONBUN., 35, NO.4, APRIL 1978, P.253-61

JAPANESE. THE EFFECTS OF PORE SIZE DISTRIBUTION AND THE
CHEMICAL NATURE OF THE PERMEATING GAS ON THE PERMEABILITY
COEFFICIENT WERE INVESTIGATED. GAS FLOW WAS FOUND TO

CONSIST OF A MIXTURE OF VISCOUS AND SLIP FLOW. THE DEPENDENCE OF THE PERMEABILITY COEFFICIENT OF INORGANIC GASES ON PORE SIZE DISTRIBUTION AND THE MEAN FREE PATH OF THE GAS AGREED WITH A PREVIOUSLY PROPOSED THEORETICAL EQUATION WHEREAS THOSE OF ORGANIC GASES WERE MUCH LARGER THAN THE THEORETICAL VALUES. IT WAS SUGGESTED THAT INTERACTION BETWEEN MEMBRANE AND GAS COULD BE THE CAUSE OF OBSERVED DIFFERENCES FOR ORGANIC GASES. 14 REFS. 6M-93513

PARYLENE POLYMERS. I. SYNTHESIS, PROPERTIES AND IMPORTANCE
78-08 20094L

BALDOUF, L. HAMANN, C. LIBERA, L.

PLASTE U.KAUT., 25, NO. 2, FEB. 1978, P. 61-4

GERMAN. THE PREPARATION OF POLY-P-XYLYLENES (PARYLENE) IS DESCRIBED AND THEIR DEPOSITIONS AS FILMS ON COOLED SURFACES BY BI-RADICAL COMBINATION METHODS, VIA THE PYROLYSIS OF P-XYLENE AND DI-P-XYLENE DERIVATIVES IN LOW-PRESSURE SYSTEMS, IS DISCUSSED. EXTREMELY UNIFORM POLYMER COATINGS OF THICKNESS 80A TO 100 MICRONS CAN BE ACHIEVED ON METAL, GLASS, WOOD OR PAPER, THEIR PURITY, MOLECULAR WEIGHT AND TRANSPARANCY BEING DETERMINED BY THE NATURE OF THE STARTING MATERIALS AND DEPOSITION CONDITIONS. ELECTRICAL AND MECHANICAL PROPERTIES AND GAS PERMEABILITY ARE EXAMINED AND USE OF THE FILMS AS DIELECTRICS IS DISCUSSED. 60 REFS. 42W

GAS PERMEATION OF POLYMER BLENDS. V. COMPATIBILITY STUDIES OF POLY (VINYL CHLORIDE) /POLY-EPSILON-CAPROLACTONE BLENDS
78-08 19713L

SHUR, Y. J. RANBY, B.

J.MACROMOL.SCI.B, 14, NO. 4, 1977, P. 565-72

THE TRANSPORT BEHAVIOUR OF OXYGEN AND NITROGEN AT 25C WAS STUDIED FOR PHYSICAL BLENDS OF PVC/PCL AND FOUR TYPES OF ETHYLENE-VINYL ACETATE AND ACRYLONITRILE-BUTADIENE COPOLYMERS. THE PVC/PCL BLENDS WERE SHOWN TO FORM A COMPATIBLE SYSTEM. IT WAS ALSO SHOWN THAT AT PCL CONTENTS OF LESS THAN 30 WT.%, A SEPARATE CRYSTALLISED PCL PHASE WAS FORMED. THE RESULTS ARE DISCUSSED IN TERMS OF COOPERATIVE

SEGMENTAL RELAXATION PROCESSES BETWEEN PVC AND PCL CHAINS.
14 REFS. 42C382-6125-93513

HIGH DENSITY POLYETHYLENE 78-06 16996L

ANON

MAT.PLAST.ELAST.,NO.1,JAN.1978,P.34-7

ITALIAN. CONSIDERATION IS GIVEN TO THE PRODUCTION OF HDPE WITH REFERENCE TO COMMONLY USED POLYMERISATION PROCESSES, AND TO THE PROPERTIES OF THIS MATERIAL, I.E. CHEMICAL PROPERTIES, GAS PERMEABILITY, MECHANICAL, ELECTRICAL AND THERMAL PROPERTIES. DETAILS ARE ALSO GIVEN OF COMPOUNDING INGREDIENTS, PROCESSING AND APPLICATIONS, AND PROPERTIES OF HDPE AND COMPARED WITH THOSE OF LDPE AND PP. A LIST OF HDPE TRADE MARKS AND MANUFACTURERS IS INCLUDED. 42C11

ESTIMATION OF POLYMER SOLUBILITY PARAMETERS BY GAS CHROMATOGRAPHY 78-07 18239L

DIPAOLA-BARANYI, G. GUILLET, J. E.

MACROMOLECULES,11,NO.1,JAN./FEB.1978,P.228-35

PARTIAL MOLAR HEATS OF MIXING, PARTIAL MOLAR FREE ENERGIES OF MIXING AND THE FLORY-HUGGINS CONSTANT WERE DETERMINED FOR A VARIETY OF HYDROCARBONS IN PS AND POLYMETHYL ACRYLATE BY GAS CHROMATOGRAPHY. SOLUBILITY COEFFICIENTS AT INFINITE DILUTION WERE CALCULATED FROM THE THERMODYNAMIC DATA AND COMPARED WITH THEORETICAL PREDICTIONS. 33 REFS. 42C21-9351

SOME ASPECTS OF PLASMA COPOLYMERISATION OF ACETYLENE WITH
NITROGEN AND/OR WATER 78-06 16346L

YASUDA, H. HIROTSU

J.POLYM.SCI.POLYM.CHEM.,15,NO.11,NOV.1977,P.2749-71

PLASMA POLYMERISATIONS OF MIXTURES OF ACETYLENE-NITROGEN,
ACETYLENE-WATER AND ACETYLENE-NITROGEN-WATER WERE
INVESTIGATED USING AN ELECTRODELESS GLOW DISCHARGE FROM A
13.5 MHZ RADIOfREQUENCY SOURCE. PROPERTIES OF PLASMA
POLYMERS WERE EXAMINED AS FUNCTIONS OF MOLE RATIOS OF
NITROGEN AND/OR WATER TO ACETYLENE. PROPERTIES INVESTIGATED
INCLUDE INTERNAL STRESS, GAS PERMEABILITY AND SURFACE
ENERGY. 24 REFS. 42F1A-7223

POLYMERISATION OF ORGANIC COMPOUNDS IN AN ELECTRODELESS GLOW
DISCHARGE. IX 78-05 15701L

YASUDA, H. HIROTSU, T.

J.APPL.POLYM.SCI.,21,NO.11,NOV.1977,P.3167-77

PROPERTIES (FREE-RADICAL CONCENTRATION, GAS PERMEABILITIES,
INTERNAL STRESS, AND CONTACT ANGLE OF WATER) OF PLASMA
POLYMERS OF ACETYLENE AND OF ACRYLICNITRILE WERE INVESTIGATED
AS A FUNCTION OF FLOW RATE OF MONOMER. IT WAS FOUND THAT
THE FLOW RATE HAS A STRONG INFLUENCE ON FREE-RADICAL
CONCENTRATION, GAS PERMEABILITIES AND INTERNAL STRESS BUT
LITTLE INFLUENCE ON THE CONTACT ANGLE OF WATER. THE
DISCHARGE POWER HAS LITTLE EFFECT ON PROPERTIES WHEN FULL
GLOW IS MAINTAINED. GAS PERMEABILITIES DECREASE WITH
INCREASING CONCENTRATION OF FREE RADICALS. 11 REFS.
(PT.VIII,IBID. P.3139-46) 42F1-7223

NOBLE GAS PERMEABILITY OF POLYMER FILMS AND COATINGS
78-03 12274L

HAMMON, H. G. ERNST, K. NEWTON, J. C.

J.APPL.POLYM.SCI.,21,NO.7,JULY 1977,P.1989-97

PERMEABILITIES OF NOBLE GASES, PARTICULARLY ARGON, KRYPTON AND XENON, WERE MEASURED THROUGH A NUMBER OF POLYMER FILMS AND COATINGS. EXTRAPOLATION OF THE LOG OF THE PERMEATION COEFFICIENT VERSUS THE SQUARE OF THE GAS MOLECULAR DIAMETER WAS USED TO ESTIMATE RANDOM PERMEABILITY. AN EQUATION IS PRESENTED FOR PREDICTING PERMEABILITY TO THESE NOBLE GASES AS A FUNCTION OF THE BASE POLYMER STRUCTURE OF THE COATING.
14 REFS. 625-93513

DETERMINATION OF DIFFUSION COEFFICIENTS IN POLYETHYLENE BY GAS CHROMATOGRAPHY 78-03 12526L

MILLEN, W. HAWKES, S. J.

J.POLYM.SCI.POLYM.LETT.,15,NO.8,AUG.1977,P.463-5

AN EXPRESSION FOR CALCULATING THE STATIONARY PHASE MASS TRANSFER TERM FOR THE DIFFUSIVITY OF ORGANIC MOLECULES IN LIQUID POLYMERS IS DISCUSSED. REVISED VALUES OF DIFFUSION COEFFICIENTS FOR SEVERAL SOLUTES IN LDPE USING THIS EQUATION ARE TABULATED. 8 REFS. 42C11-9351

DIFFUSION CELL FOR STUDY OF GAS TRANSFER THROUGH WALLS OF POLYMER TUBES 78-02 11562L

KAPANIN, V. V. PRILIPOV, V. V.

POLYM.SCI.USSR,18,NO.3,1976,P.820-3

THE DESIGN OF A DIFFUSION CELL FOR INVESTIGATING THE TRANSFER OF LOW MOLEC.WT. SUBSTANCES THROUGH POLYMER TUBE WALLS, USING A GAS CHROMATOGRAPH, IS DESCRIBED. USING LDPE TUBES, IT WAS SHOWN THAT PRESSURE HAD NO EFFECT ON THE PERMEABILITY FACTOR AND THAT THE TEMP. DEPENDENCE OF THE

PERMEABILITY FACTOR WAS SIMILAR TO THAT OF FILMS. 8 REFS.
293513T

BARRIER POLYMERS 78-01 11207L

SALAME, M. STEINGISER, S.

POLYM.PLAST.TECHNCL.ENGN.,8,NO.2,1977,P.155-75

FACTORS AFFECTING POLYMER BARRIER PROPERTIES AND THE EFFECTS OF POLYMER PARAMETERS, TEMP. AND THICKNESS AND PERMEATING SPECIES ON POLYMER BARRIER PROPERTIES ARE DISCUSSED. THE PREDICTION OF PERMEABILITY, DEFINITION AND CLASSIFICATION OF HIGH BARRIER POLYMERS, TYPES AND PROPERTIES OF HIGH BARRIER POLYMERS, DILUTE SOLUTION ABSORPTION, BARRIER PROPERTIES OF NITRILE POLYMERS AND ACRYLONITRILE-STYRENE COPOLYMERS ARE ALSO CONSIDERED. 12 REFS. (ACS CENTENNIAL MEETING, NEW YORK CITY, APRIL 1976) 9351

ENGINEERING PROPERTIES AND PERFORMANCE OF HIGH ACRYLONITRILE/STYRENE POLYMER SYSTEMS 77-12 05484C

HALL, W. J. CHI, H. K.

CLEVELAND, OHIO, OCT. 1976, P.1-5. CONFER.012 PUBLCN.
DETAILS- SPE. HIGH PERFORMANCE PLASTICS. NATIONAL TECHNICAL CONFERENCE

HIGH ACRYLONITRILE-STYRENE COPOLYMER SYSTEMS, CONTAINING 60-70% ACRYLONITRILE, ARE DISCUSSED WITH PARTICULAR REFERENCE TO SYNTHESIS, THERMAL STABILITY, MELT VISCOSITY, GENERAL PROPERTIES OF AN INJECTION MOULDED SPECIMEN, ORIENTED FILM AND SHEET PROPERTIES, MELT FLOW, CHEMICAL RESISTANCE UV RESISTANCE, OUTDOOR WEATHERING RESISTANCE AND PERMEABILITY TRANSFER OF GASES AND WATER VAPOUR. 8 REFS.
42C391C21-9

CHROMATOGRAPHIC DETERMINATION OF THE GAS PERMEABILITY OF FILMS 77-12 05404L

ARKHIPTSEV, N. E. SHISHIMAROV, A. A. MOCHALOVA, L. A.

PLAST.MASSY, NO.4, 1977, P.73-4

RUSSIAN. THE METHOD PERMITS DETERMINATION OF THE PERMEABILITY OF POLYMERIC FILMS TO CARBON DIOXIDE, OXYGEN AND NITROGEN. 3 REFS. 93513T SELECTED TRANSLATIONS FROM THIS JOURNAL ARE AVAILABLE TO SUBSCRIBERS TO THE RAPRA PRODUCED INTERNATIONAL POLYMER SCIENCE AND TECHNOLOGY

STUDY OF POLYMERS BY INVERSE GAS CHROMATOGRAPHY
77-01 00297L

BRAUN, J. M. GUILLET, J. E.

ADV.POLYM.SCI., NO.21, 1976, P.107-45

GAS CHROMATOGRAPHY; REVIEW. 116 REFS. 91T

PERMEABILITY -STRUCTURE RELATIONSHIPS OF HIGH POLYMERS
77-01 00337C

SALAME, M.

COATINGS PLAST.PREPRINTS, 36, NO.1, APR. 1976, P.488-97. CONFER. PUBL CN. DETAILS- 1ST CHEMICAL CONGRESS ON N.AMERICAN CONTINENT, MEXICO CITY, DEC. 1975

GAS PERMEABILITY; CHEMICAL STRUCTURE; LIQUID. 10 REFS. 9351

EFFECTS OF GASEOUS ENVIRONMENTS ON POLYMERS

77-03 01455L

BROWN, N.

MAT.SCI.ENGNG.,25,NO.1/2,SEPT./OCT.1976,P.87-91

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(THESIS, RUTGERS UNIVERSITY, THE STATE UNIVERSITY OF NEW
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MACROMOLECULES,6,NO.2,MARCH/APRIL 1973,P.223-7

IN THIS PAPER THE FACTORS WHICH GOVERN PEAK SHAPE IN GAS CHROMATOGRAPHY ARE OUTLINED AND THEIR RELEVANCE TO DIFFUSION MEASUREMENTS ON POLYMERIC SUBSTRATES IS INVESTIGATED. BY A SUITABLE CHOICE OF CONDITIONS THE VAN DEEMTER EQUATION ENABLES DIFFUSION COEFFICIENTS TO BE CALCULATED FROM THE VARIATION IN CHROMATOGRAPHIC PEAK WIDTH WITH CARRIER GAS FLOW RATE. THIS METHOD IS APPLICABLE TO SOME HYDROCARBON PENETRANTS IN A PE STATIONARY PHASE. 20 REFS. 93513

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THE DIFFUSION TIME LAG WAS STUDIED IN POLYMERIC MEMBRANES CONTAINING A DISPERSED SECOND PHASE WHICH IMMOBILISED PART OF THE DIFFUSING SUBSTANCE. EQUATIONS WERE DEVELOPED FOR PREDICTING THIS QUANTITY BY OBTAINING ASYMPTOTIC SOLUTIONS OF THE APPROPRIATE TRANSPORT EQUATIONS. A CLOSED-VOLUME, PRESSURE-GROWTH METHOD WAS USED TO COLLECT TIME LAG AND PERMEABILITY DATA FOR TRANSPORT OF CARBON DIOXIDE, METHANE, NITROGEN AND HELIUM THROUGH SILICONE RUBBER MEMBRANES CONTAINING VARIOUS AMOUNTS OF 5A MOLECULAR SIEVE CRYSTALS. SORPTION CHARACTERISTICS OF THE MEMBRANES FOR THE GASES WERE MEASURED GRAVIMETRICALLY. RESULTS SHOWED THAT THE TIME LAG WAS INCREASED BY UP TO TWO ORDERS OF MAGNITUDE BY DESPERSING RELATIVELY SMALL AMOUNTS OF MOLECULAR SIEVE IN THE POLYMER. (THESIS, UNIVERSITY OF TEXAS AT AUSTIN, 1972, PP.187, ORDER NO.73-466) 45C-6M-93513

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WEST-GAEKE METHOD FOR SUBSEQUENT DETERMINATION OF THE TRAPPED SULPHUR DIOXIDE. ESSENTIALLY, A GLASS TUBE, STOPPERED AT ONE END, IS FILLED WITH A SOLUTION OF 1.0M SODIUM TETRACHLOROMERCURATE AND THE EXPOSED END COVERED WITH A SILICONE RUBBER MEMBRANE. WHEN THE TUBE IS EXPOSED TO AIR CONTAINING SULPHUR DIOXIDE, THE SULPHUR DIOXIDE PERMEATES THROUGH THE MEMBRANE AND IS ABSORBED BY THE SOLUTION.
(THESIS, LOUISIANA STATE UNIVERSITY AND AGRICULTURAL AND MECHANICAL COLLEGE, 1972, PP.89, ORDER NO.73-2980)
45C-6M-93513

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POLYM.J.(JAP.),4,NO.6,1973,P.601-6

CHAIN SCISSION OF NYLON 66 FILMS DUE TO EXPOSURE TO NITROGEN DIOXIDE AT A PRESSURE OF 0.5 MM.HG WAS STUDIED AS A FUNCTION OF TEMP., FILM THICKNESS AND POLYMER MORPHOLOGY. THE RATE OF RANDOM CHAIN SCISSION WAS VERY SENSITIVE TO CHANGES IN MORPHOLOGY CAUSED BY VARIATIONS IN SOLVENT COMPOSITION FOR FILM CASTING AND IN METHOD OF PREPARATION. DECREASE OF CHAIN SCISSION WITH FILM THICKNESS INDICATED THAT DIFFUSION OF NITROGEN DIOXIDE INTO NYLON 66 WAS RATE-DETERMINING. AMIDE LINKS IN THE CHAIN FOLDS OF THE POLYMER MOLECULES LOCATED IN THE INTERFACIAL REGION BETWEEN AMORPHOUS AND CRYSTALLINE POLYMER PORTIONS WERE THOUGHT TO BE PARTICULARLY SUSCEPTIBLE TO CHAIN SCISSION, DUE TO THEIR STRAIN ENERGY.
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JELLINEK, H. H. G.
TEXT. RES. J., 43, NO. 10, OCT. 1973, P. 557-60

THE EFFECT OF NITROGEN DIOXIDE AND SULPHUR DIOXIDE ON LINEAR POLYMERS IN PRESENCE AND ABSENCE OF AIR, OZONE AND NEAR-UV IRRADIATION WAS STUDIED. BESIDES RANDOM CHAIN SCISSION AND CROSSLINKING, INCORPORATION OF RESPECTIVE GROUPS ALONG THE SIDES OF THE CHAINS WAS FOUND TO TAKE PLACE. LOW MOLEC. WT.

COMPOUNDS WERE ALSO EVOLVED. DEGRADATION WAS SENSITIVE TO THE MORPHOLOGY OF THE POLYMER AND ALSO TO THE PERCENTAGE OF CRYSTALLINITY, SIZE AND SIZE DISTRIBUTION OF CRYSTALLITES IN THE POLYMER FILMS. RANDOM CHAIN SCISSION IS DISCUSSED IN DETAIL. 13 REFS. (ACS, DIV. OF CELLULOSE, WOOD AND FIBER CHEMISTRY, SYMPOSIUM ON TEXTILE FINISHING CHEMISTRY, 164TH NATIONAL MEETING, NEW YORK, AUG./SEPT. 1972) 93513

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18 79-12 39758L

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17 80-06 48299L

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14 80-09 52281L

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22 79-06 32784L

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27 78-08 20094L

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2 82-03 03931L

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1 82-03 03929L
1 82-03 03930L

2 82-03 03931L
2 82-03 03932L

3 82-03 03934L
3 82-03 03935L
5 82-01 00520L

6 81-12 79071L
7 81-07 69357L
7 81-11 76102L

9 81-05 66434L
13 80-11 54673L
14 80-09 52620C

17 80-04 45453L
17 80-06 47953C
17 80-06 48299L

20 79-10 37611L
21 79-10 36895L
22 79-06 32784L
22 79-08 35444L

23 79-06 32280C
24 78-12 24850L
24 79-01 26081L

25 79-01 27117L
26 79-01 27119L

30 78-02 11562L
30 78-03 12526L
33 77-03 01455L

34 7401-20800L
35 73-05 12536L
35 7510-37548L

36 73-06 13300L
36 73-08 14644L
37 73-12 17060L

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38 73-12 17253L	10 81-01 58208L
	10 81-01 58209L
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2 82-03 03931L	38 73-12 17253L
4 82-02 02270L	38 73-12 17421L
17 80-06 48299L	
21 79-10 36895L	DISCHARGE
24 79-01 26081L	29 78-05 15701L
32 77-01 00297L	
35 73-05 12536L	DISCUSSED
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1 82-03 03929L	
8 81-06 67207L	DOMAINS
25 79-01 27117L	22 79-08 35444L
34 7408-25139L	
36 73-08 14644L	DRAW RATIO
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7 81-11 76102L	
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36 73-06 13300L	4 82-02 02023L
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2 82-03 03931L	7 81-07 69357L
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30 78-03 12526L	13 80-10 53121A
33 77-07 02524L	23 79-06 32280C
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3 82-03 03935L	2 82-03 03931L
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23 79-06 32280C	5 82-01 00264L
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31 78-01 11207L	9 81-05 65408L
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6 81-11 76608C	15 80-07 50126L
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1 82-03 03930L	17 80-06 48299L
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	2 82-03 03931L
	33 77-03 01455L

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19 79-11 38007L

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13 80-10 53121A

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14 80-09 52281L

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13 80-10 53121A

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7 81-10 75169L

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12 80-11 55922L

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9 81-02 59593L

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19 79-11 38147L
26 78-09 21549L
27 78-08 20094L
28 78-06 16996L

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20 79-10 36773L

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12 80-11 55922L

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29 78-05 15701L

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8 81-06 68247L

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18 79-12 39757L

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9 81-05 66434L

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9 81-02 59593L

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31 77-12 05484C

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2 82-03 03931L
18 79-12 39757L

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2 82-03 03931L
17 80-04 45453L
28 78-07 18239L

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33 77-03 01455L

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14 80-09 52620C
20 79-10 37611L

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13 80-10 53121A

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13 80-10 53121A

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3 82-03 03935L

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1 82-03 03929L
2 82-03 03931L

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4 82-02 02270L

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2 82-03 03931L
18 79-12 39758L
30 78-02 11562L

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6 81-12 79071L

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 28 78-07 18239L
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 14 80-09 52281L
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 2 82-03 03931L
 7 81-11 76102L
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 27 78-08 19713L
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 13 80-10 53121A

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 20 79-10 36773L
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 20 79-10 36773L
 20 79-10 37611L
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 8 81-06 68247L
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 7 81-10 75169L
 13 80-10 53121A
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 22 79-06 32784L
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 9 81-05 65408L
 11 80-12 57154L
 15 80-07 50126L
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 22 79-06 32784L
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 2 82-03 03931L
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 5 82-01 00264L

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 6 81-11 76608C
 13 80-10 53121A
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 1 82-03 03929L
 3 82-03 03935L
 16 80-06 48608L
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 22 79-06 32784L
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 35 7409-25723L
 38 73-12 17253L
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 8 81-06 67207L
 9 81-05 65408L
 11 80-12 57154L
 13 80-11 54673L
 15 80-07 50126L
 15 80-08 51211L
 16 80-06 48608L
 16 80-06 48962L
 17 80-06 47953C
 17 80-06 48299L
 18 79-12 39758L
 19 79-11 38007L
 24 79-01 26081L
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 27 78-08 20094L
 30 78-03 12274L
 32 77-12 05404L
 34 7408-25139L
 35 73-05 12536L
 38 73-12 17253L
 38 73-12 17421L
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 2 82-03 03931L
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 13 80-10 53121A

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19 79-11 38007L	9 81-05 66434L
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28 78-07 18239L	28 78-07 18239L
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23 79-06 32280C	29 78-05 15701L
36 73-06 13300L	FREE VOLUME
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9 81-05 66434L	9 81-05 66434L
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6 81-12 79071L	33 77-07 02524L
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6 81-12 79071L	24 79-01 26459L
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10 81-01 58208L	18 79-12 39758L
10 81-01 58209L	GAMMA-IRRADIATION
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14 80-09 52620C	GAS CHROMATOGRAPH
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14 80-09 52281L	GAS CHROMATOGRAPHY
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14 80-09 52281L	7 81-11 76102L
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9 81-02 59593L	24 78-12 24850L
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4 82-02 02023L	32 77-01 00297L
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9 81-02 59593L	29 78-05 15701L
13 80-10 53121A	GAS PERMEABILITY
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12 80-11 55870L	1 82-03 03930L
	2 82-03 03931L
	2 82-03 03932L
	3 82-03 03934L

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3	82-03	03935L
4	82-02	02023L
5	82-01	00264L
5	82-01	00520L
6	81-11	76608C
6	81-11	77873L
7	81-07	69357L
7	81-10	75169L
7	81-11	76102L
8	81-06	67207L
8	81-06	68247L
9	81-02	59593L
9	81-05	65408L
9	81-05	66434L
10	81-01	58208L
10	81-01	58209L
11	80-12	57154L
12	80-11	55922L
13	80-11	54673L
14	80-09	52281L
15	80-08	51211L
16	80-06	48962L
17	80-04	45453L
17	80-06	48299L
18	79-12	39757L
19	79-11	38007L
19	79-11	38147L
20	79-10	36773L
21	79-10	36776L
21	79-10	36895L
22	79-06	32784L
22	79-08	35444L
23	79-06	32280C
24	78-12	24850L
24	79-01	26081L
25	79-01	26881L
25	79-01	27117L
26	78-09	20897L
26	78-09	21549L
26	79-01	27119L
27	78-08	19713L
27	78-08	20094L
28	78-06	16996L

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29	78-06	16346L
30	78-02	11562L
31	77-12	05484C
31	78-01	11207L
32	77-01	00337C
33	77-03	01455L
33	77-07	02524L
33	77-07	02525L
34	7408-25139L	
35	7409-25723L	
36	73-10	16349L
37	73-12	17060L
37	73-12	17061L
38	73-12	17421L

GAS SOLUBILITY

5	82-01	00520L
7	81-11	76102L

GAS TRANSMISSION RATE

3	82-03	03935L
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GAS TRANSPORT

7	81-11	76102L
9	81-05	66434L

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22	79-08	35301L
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33	77-03	01455L
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2	82-03	03932L
5	82-01	00520L
7	81-07	69357L
7	81-11	76102L
8	81-06	67207L
9	81-05	65408L
9	81-05	66434L
11	80-12	57154L
13	80-11	54673L
15	80-08	51211L

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16	80-06	48962L	29 78-05 15701L
18	79-12	39758L	
19	79-11	38147L	GORDON, G. A.
22	79-08	35444L	3 82-03 03935L
24	78-12	24850L	
26	79-01	27119L	GRAFT COPOLYMERS
31	77-12	05484C	19 79-11 38007L
33	77-03	01455L	
35	7409-25723L		GRANULES
			8 81-06 68247L
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11	80-12	57566L	9 81-02 59593L
13	80-10	53121A	
18	79-12	39758L	HAZE
26	78-09	21549L	4 82-02 02023L
27	78-08	22094L	
GIVEN	HEAT CURING		
13	80-10	53121A	6 81-11 76608C
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21	79-10	36895L	2 82-03 03931L
			2 82-03 03932L
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1	82-03	03929L	8 81-06 67207L
1	82-03	03930L	
2	82-03	03931L	
2	82-03	03932L	HEATS OF MIXING
5	82-01	00520L	28 78-07 18239L
7	81-07	69357L	
8	81-06	67207L	HELIUM
9	81-05	66434L	5 82-01 00520L
17	80-06	48299L	7 81-11 76102L
18	79-12	39757L	16 80-06 48962L
24	79-01	26081L	21 79-10 36895L
34	7401-20800L		33 77-03 01455L
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22	79-06	32784L	37 73-12 17060L
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29	78-05	15701L	19 79-11 38007L
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29	78-06	16346L	37 73-12 17060L

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11	80-12 57566L	28	78-07 18239L
23	79-02 28108L		
23	79-06 32280C	HYDROGEN	
28	78-06 16996L	17	80-06 47953C
31	77-12 05484C	17	80-06 48299L
32	77-01 00337C	21	79-10 36895L
36	73-10 16349L		
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5	82-01 00520L	33	77-03 01455L
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3	82-03 03935L	3	82-03 03934L
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2	82-03 03932L	6	81-11 76608C
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2	82-03 03932L	16	80-06 49196L
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19	79-11 38007L	7	81-07 69357L
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9	81-05 66434L	11	80-12 57154L
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5	82-01 00520L	9	81-05 65408L
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7	81-11 76102L	IKEDA, R. M.	
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19	79-11 38147L	IMMOBILISED	
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8	81-06 68247L	IMPACT MODIFIERS	
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1	82-03 03929L	IMPACT PROPERTIES	
36	73-08 14644L	19	79-11 38007L
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2	82-03 03931L	14	80-09 52281L
		36	73-10 16349L

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36 73-10 16349L	4 82-02 02270L
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27 78-08 20094L	3 82-03 03934L
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4 82-02 02270L	INTERFACE
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29 78-06 16346L	INTERMOLECULAR INTERACTION
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28 78-06 16996L	INTERNAL STRESS
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6 81-11 76608C	29 78-06 16346L
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19 79-11 38007L	19 79-11 38007L
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2 82-03 03932L	4 82-02 02023L
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25 79-01 26881L	INTRODUCTION
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28 78-07 18239L	INVERSE
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6 81-12 79071L	32 77-01 00297L
16 80-06 49196L	INVESTIGATED
21 79-10 36895L	29 78-06 16346L
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31 77-12 05484C	35 73-05 12536L
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7 81-10 75169L	7 81-11 76102L
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26 78-09 20897L	3 82-03 03935L
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26 78-09 20897L	6 81-12 79071L

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11 80-12 57154L	7 81-10 75169L	7 81-10 75169L
17 80-06 47953C		
21 79-10 36776L		
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7 81-11 76102L	6 81-11 77873L	
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2 82-03 03931L	4 82-02 02270L	9 81-05 66434L
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21 79-10 36895L		22 79-06 32784L
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1 82-03 03929L	KINKING	
1 82-03 03930L	2 82-03 03932L	
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18 79-12 39757L	5 82-01 00520L	8 81-06 68247L
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17 80-06 48299L	30 78-03 12274L	
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19 79-11 38007L	5 82-01 00264L	
28 78-06 16996L	LAG	
36 73-10 16349L	37 73-12 17060L	
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33 77-07 02525L	16 80-06 48608L	
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29 78-05 15701L	25 79-01 26881L	
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24 79-01 26459L	25 79-01 27117L	
26 78-09 20897L		
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6 81-11 77873L		
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9 81-05 65408L		

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22	79-06 32784L	6	81-12 79071L
		25	79-01 27117L
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10	81-01 58208L	5	82-01 00264L
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16	80-06 48962L	6	81-11 77873L
28	78-06 16996L		
30	78-02 11562L		
30	78-03 12526L		
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3	82-03 03934L	3	82-03 03935L
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19	79-11 38007L	6	81-11 77873L
19	79-11 38147L		
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19	79-11 38147L	28	78-06 16996L
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38	73-12 17421L	14	80-09 52281L
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26	78-09 21549L	22	79-08 35444L
30	78-03 12526L		
32	77-01 00337C		
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33	77-03 01455L	35	73-05 12536L
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13	80-10 53121A	3	82-03 03934L
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6	81-11 76608C		
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22	79-08 35444L	2	82-03 03931L
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7	81-11 76102L	4	82-02 02270L
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	9	81-05 65408L	
	18	79-12 39758L	
	20	79-10 36773L	
	21	79-10 36776L	

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24 78-12 24850L
24 79-01 26081L

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17 80-04 45453L

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24 79-01 26081L
26 79-01 27119L

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2 82-03 03932L

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6 81-11 76608C
8 81-06 67207L
14 80-09 52281L
19 79-11 38007L
27 78-08 20094L
28 78-06 16996L
33 77-03 01455L
36 73-10 16349L

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7 81-11 76102L
13 80-11 54673L
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31 77-12 05484C

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31 77-12 05484C

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6 81-11 77873L
6 81-12 79071L
12 80-11 55922L

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20 79-10 36773L

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5 82-01 00520L
6 81-12 79071L
9 81-02 59593L
10 81-01 58208L
10 81-01 58209L
15 80-08 51719L
17 80-04 45453L
19 79-11 38007L
21 79-10 36776L
24 78-12 24850L
24 79-01 26459L
26 78-09 20897L
36 73-06 13300L
37 73-12 17060L
37 73-12 17061L

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26 78-09 21549L

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16 80-06 48608L
18 79-12 39758L

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2 82-03 03931L
7 81-11 76102L
25 79-01 26881L
37 73-12 17060L

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20 79-10 36773L

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9 81-05 65408L	23	79-06 32280C
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34 7408-25139L	3	82-03 03934L
	13	80-11 54673L
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12 80-11 55870L	5	82-01 00520L
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4 82-02 02270L	2	82-03 03932L
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4 82-02 02270L	13	80-11 54673L
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5 82-01 00520L	37	73-12 17060L
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13 80-10 53121A	2	82-03 03931L
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20 79-10 37611L	3	82-03 03934L
	3	82-03 03935L
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1 82-03 03930L	11	80-12 57154L
2 82-03 03932L	13	80-10 53121A
5 82-01 00520L	17	80-04 45453L
10 81-01 58209L	23	79-06 32280C
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20 79-10 36773L	11	80-12 57154L
	27	78-08 20094L
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7 81-11 76102L	13	80-10 53121A
9 81-05 65408L		
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4 82-02 02023L	23	79-06 32280C
	27	78-08 19713L
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4 82-02 02023L	5	82-01 00264L
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15 80-07 50126L		

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19 79-11 38007L	7 81-11 76102L
38 73-12 17421L	8 81-06 67207L
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1 82-03 03929L	18 79-12 39758L
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13 80-10 53121A	27 78-08 19713L
15 80-07 50126L	29 78-06 16346L
MYLAR	32 77-12 05404L
17 80-06 47953C	33 77-03 01455L
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2 82-03 03931L	33 77-07 02525L
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7 81-07 69357L	38 73-12 17253L
9 81-05 66434L	38 73-12 17421L
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21 79-10 36895L	29 78-06 16346L
NEOPENTANE	NMR
2 82-03 03931L	3 82-03 03935L
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3 82-03 03935L	30 78-03 12274L
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18 79-12 39758L	6 81-11 77873L
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14 80-09 52281L	36 73-06 13300L
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23 79-06 32280C	9 81-02 59593L
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31 78-01 11207L	21 79-10 36776L
NITRILE RUBBERS	24 79-01 26081L
25 79-01 27117L	NR
	11 80-12 57566L
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	25 79-01 26881L
	38 73-12 17253L

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7 81-11 76102L	3 82-03 03934L
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6 81-12 79071L	4 82-02 02023L
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16 80-06 49196L	16 80-06 48962L
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6 81-11 76608C	21 79-10 36776L
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TWO-COMPONENT	VAPOUR-PHASE
6 81-11 76608C	4 82-02 02023L
UNDER	VAPOUR-PHASE POLYMERISATION
11 80-12 57154L	12 80-11 55870L
URETHANE	VAPOUR-PRESSURE OSMOMETRY
5 82-01 00264L	20 79-10 37611L
UV	VAPOURS
11 80-12 57154L	1 82-03 03929L 5 82-01 00520L 15 80-08 51211L 20 79-10 36773L 34 7408-25139L
UV DEGRADATION	34 7408-25139L 35 7510-37548L
11 80-12 57154L	
31 77-12 05484C	
UV IRRADIATION	VARIOUS
38 73-12 17421L	9 81-05 65408L 11 80-12 57154L 15 80-07 50126L 23 79-02 28108L
UV STABILITY	VEHICLE SUSPENSIONS
9 81-05 65408L	9 81-02 59593L
VACUUM	VINYL
7 81-11 76102L	27 78-08 19713L
23 79-02 28108L	
VACUUM FORMED	VINYL ACETATE COPOLYMER
7 81-10 75169L	27 78-08 19713L
VAN DER WAALS ATTRACTION	VINYLALKYLDIMETHYL
33 77-03 01455L	16 80-06 49196L
VAPOUR	VISCOELASTIC PROPERTIES
12 80-11 55870L	8 81-06 67207L
19 79-11 38007L	
20 79-10 37611L	
21 79-10 36895L	
25 79-01 27117L	

VISCOSITY
26 78-09 21549L

VISTRON CORP
14 80-09 52281L

VOLUME
9 81-05 66434L

VULCANISATION
6 81-11 76608C
13 80-10 53121A

WALLS
30 78-02 11562L

WATER
23 79-06 32280C
29 78-05 15701L
29 78-06 16346L
35 7409-25723L
36 73-10 16349L

WATER PERMEABILITY
23 79-06 32280C
26 78-09 21549L

WATER VAPOUR
5 82-01 00520L
31 77-12 05484C

WATER VAPOUR PERMEABILITY
15 80-08 51211L

WATER-SOLUBLE
21 79-10 36776L

WEATHERING
19 79-11 38147L

WEATHERING RESISTANCE
31 77-12 05484C

WHICH
21 79-10 36776L

WILLIAMS, M. J. L.
1 82-03 03929L

WIRTSCHAFTSVERBAND DER DEUTSCH
13 80-10 53121A

XENON
30 78-03 12274L

ZIEGLER, B.
8 81-06 68247L

42C11
28 78-06 16996L

42C11-61122-6125-93513
33 77-07 02524L

42C11-8953-93513
7 81-11 76102L

42C11-935T
4 82-02 02270L

42C11C3311-6125-93513
27 78-08 19713L

42C12-6M-93513
6 81-12 79071L

42C131D12
9 81-02 59593L

42C21C391D11-6125-93513
33 77-07 02525L

42C35-55CAH-93513
3 82-03 03935L

42C351A-9351
7 81-10 75169L

42C35111-9351
28 78-07 18239L

42C382-622-932 8 81-06 68247L	43C6-51SS-9 5 82-01 00264L
42C391-7223 29 78-05 15701L	45C 6 81-11 76608C
42C391-9 29 78-05 15701L	45C-6M-93513 37 73-12 17060L 37 73-12 17061L
42D1-625-93513 25 79-01 27117L	6A3-93513 30 78-03 12274L
42F1-7223 29 78-05 15701L	6E1-93 19 79-11 38147L
42F1-9 29 78-05 15701L	6H2-93513T 30 78-02 11562L
42F1A-7223 29 78-06 16346L	6M-93513 5 82-01 00520L 6 81-11 77873L 10 81-01 58208L 10 81-01 58209L
43C1-6125-93513 27 78-08 19713L	6P21-93513 36 73-10 16349L
43C112-625-936 17 80-06 47953C	6122-9T 20 79-10 37611L
43C12-93513 2 82-03 03931L 8 81-06 67207L	625-8(11)3464-93513T 18 79-12 39758L
43C313-93513 38 73-12 17253L	
43C318-6A31-723 4 82-02 02023L	
43C4-93513 8 81-06 67207L	
43C52-9 26 78-09 21549L	
43C52-91 26 78-09 21549L	